



United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

In cooperation with  
United States  
Department of the  
Interior, Bureau of Land  
Management, and Bureau of  
Indian Affairs, and  
University of Nevada  
Agricultural  
Experiment Station

# **Soil Survey of Churchill County Area, Nevada Parts of Churchill and Lyon Counties**

## **Part I**

# How To Use This Soil Survey

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This survey is divided into three parts. Part I includes general information about the survey area; descriptions of the detailed soil map units and soil series in the area. Part II describes the use and management of the soils and the major soil properties. Part III includes the maps.

The **detailed soil map units** follow the general information about the survey area. These map units can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**, note the number of the map sheet, and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Index to Map Units** in Part I of this survey, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Summary of Tables** shows which table has data on a specific land use for each detailed soil map unit. See **Contents** for sections of this publication that may address your specific needs.

A **State Soil Geographic Database (STATSGO)** is available for this survey area. This database consists of a soils map at a scale of 1 to 250,000 and descriptions of groups of associated soils. It replaces the general soil map published in older soil surveys. The map and the database can be used for multicounty planning, and map output can be tailored for a specific use. More information about the State Soil Geographic Database for this survey area, or any portion of Nevada, is available at the local office of the Natural Resources Conservation Service.

Some standards or values may change as more information is collected and analyzed. Thus, as older published interpretive information becomes outdated, new interpretive data must be generated and tailored to local conditions. This information is added to the State Subset of the **Map Unit Interpretation Record (MUIR)** database as needed. Map Unit Interpretation Records are the soil survey specific data and interpretations in the state soil survey database.



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This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1988. Soil names and descriptions were approved in 1994. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1994. This survey was made cooperatively by the Natural Resources Conservation Service and the U.S. Department of Interior, Bureau of Land Management, Bureau of Indian Affairs, and University of Nevada Agricultural Experiment Station. It is part of the technical assistance furnished to the Lahontan, Mason Valley, and Stillwater Soil Conservations Districts.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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# Foreword

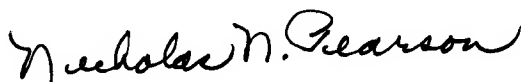
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This soil survey contains information that can be used in land-planning programs in Churchill County Area, Nevada, Parts of Churchill and Lyon Counties. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Nevada Cooperative Extension.



Nicholas N. Pearson  
State Conservationist  
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# Soil Survey of Churchill County Area, Nevada, Parts of Churchill and Lyon Counties

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## How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind or segment of the landscape. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landscape, soil scientists develop a concept, or

model, of how the soils were formed. Thus, during mapping, this model enables the soil scientists to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Individual soils on the landscape commonly merge into one another as their characteristics gradually change. To construct an accurate map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size, and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic

classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey area.

## General Nature of the Survey Area

This section gives general information about the survey area. It briefly discusses history; industries, transportation, and recreation; physiography, drainage, and geology; and climate.

## History

The Churchill County Museum and Archive provided parts of this section.

The original inhabitants of Churchill County were Paiute Indians, who lived along the shorelines of ancient Lake Lahontan. As the lake dried, they moved to areas along the banks of the Carson and Truckee Rivers and along the edge of Carson Lake and Carson Sink. In the fall of 1828, Peter Skene Ogden, an Englishman, became the first Anglo-American to follow the Humboldt River and cross the Carson Sink. Three years after Ogden's trip, another mountain man and fur trapper, Joseph Reddton Walker, became the second Anglo-American to brave through the area in 1833. In 1844 and 1845 a party of eminent path finders led by John C. Fremont, traversed the survey area.

The first explorers who visited this vast land, beginning in the late 1820's, were drawn by the lure of fur. They passed on into California and left nothing but their footprints upon the desert sand. It took the promise of "Paradise" to entice the first emigrants in 1841, but once they passed, the sounds of their westward-bound wagons were quickly replaced by restless winds.

The discovery of gold in California, in 1849, profoundly affected the land we now know as Churchill County. The main trail to promised riches followed the Humboldt Sink, crossed the dreaded "Forty Mile Desert" to the Carson River and then meandered west. In one year, over 25,000 people crossed that desert in wagons, on foot, and on horseback. Many recalled the horror of their trek across the desert, and many more did not live to tell the tale.

The first permanent settlement in Churchill County was called "Ragtown". It was an emigrant station established in 1885 by Asa Kenyon and his wife Catherine. They sold provisions to those who survived the perilous crossing. The name probably came from the emigrants who washed their clothing

and hung it to dry on the trees and bushes.

In 1858, the discovery of silver in the canyon below Mt. Davidson, (near Virginia City, NV), changed forever the destiny of that part of Utah Territory which was to become Nevada. The concern of Union supporters to keep the silver of Nevada for the North spurred the drive for statehood, and with a strained relationship growing between the Northern and Southern states, rapid communications with the West became a major concern. In 1860, the famed Pony Express crossed the west. Station's at Fairview, Sandy Springs, and Sink Station in Churchill County were an important part of this story. In the footsteps of the ponies came the Overland Telegraph and eighteen months later the East and West were linked by the wires of progress.

In 1861 Churchill County was created, with Bucklands Station its provisional county seat. In 1863, the seat of government was moved to the small mining town of La Plata, in the Stillwater Range. This early period was marked with scattered farms and freight stations which were established to support the growing traffic to the new silver discoveries in Austin, Nevada. Salt and soda were two of the most important minerals extracted in the county. Soda from Soda Lake won a gold medal at the 1876 Philadelphia Exposition.

In 1868, with mining on the decline in Churchill County, Stillwater became the third home for county government. This little town, in the heart of the farming area, had a small but growing population. It housed the county government until 1903.

In 1903, State Senator Williams, pushed through legislation that formally moved the County Seat from Stillwater to the new town of Fallon. This fourth and final move gave Churchill County the distinction of having had the most county seats of all counties in the state.

### **Industry, Transportation, and Recreation**

Extensive federal land holdings cover most of the survey area. Public lands are administered mainly by the U.S. Department of Interior, Bureau of Land Management, and U.S. Navy.

U.S. Highway 50, recently designated the "Loneliest Road" in America, traverses the area from east to west, providing an important link with the cities of Fallon and Reno to the west and communities such as Austin and Ely to the east. U.S. Highway 95 provides access to the south and

links with Interstate 80 in the northwest corner of the area.

The wide expanse of public land provides opportunities for recreational use throughout the area. Sand Mountain is commonly frequented by dune buggy enthusiasts and others who want to try the challenge of driving on the steep, sandy slopes of the large dune. Rock hounding, hiking, hunting, and fishing are among the recreational activities that bring visitors to the area.

Ranching is the primary source of income for residents in the survey area. Cow-calf ranching is the primary ranching operation. There are a few isolated areas in Dixie Valley and Antelope Valley where alfalfa is grown and sold to local and out-of-state dairy and feed lot operations.

### **Physiography, Drainage, and Geology**

The survey area lies in the heart of the Great Basin Section of the Basin and Range Physiographic Province of Fenneman (6). It is characterized by steep, north-south trending mountains and broad basins. Mountain ranges generally rise several thousand feet above the adjacent basin floors. Basins are usually closed, having no drainage outlet for runoff water from higher areas and have barren dry lakes or playas in the lowest parts. The landscape is dominated by mountains, hills, fan piedmonts, and basin floors. These broad landscapes can be divided further into their component landforms which are useful for describing the location of soils on the land. The landform names used in the map unit descriptions are after the terms defined by Frederick F. Peterson for landforms common to the Great Basin (7). These landforms are defined in the glossary included in Parts 1 and 2 of this publication.

The landforms of the area are primarily products of cycles of erosion and deposition, climaxed by the moist Pleistocene pluvials and subsequent dessication and erosion (7). Many of the basins in the area were inundated with water that converged to form ancient Lake Lahontan during these moist cycles. As a result of the extensive deep lakes, lacustrine landforms are prominent in most basins. Lake terraces, beach plains, and beach terraces are common. Terrace "steps" are commonly seen on hills and mountains that were once at water's edge. Subsequent to the recession of the lakes, erosion and redeposition have produced basin floor remnants, inset fans, stream terraces, and other

landforms that modify the original lacustrine landscape.

Above the high water line of the lakes, the basins were impacted by deposition of alluvium that coalesced to form broad fan piedmonts. Erosional and depositional forces have continued to modify these areas also, and the fan piedmont is usually cut to form inset fans and fan remnants. Frequently, the alluvium debouching from the inset fans has formed a new zone of coalescent material that is identified as a fan skirt. Fresh alluvium from the mountains and hills commonly produces alluvial fans and fan aprons that overlie the fan piedmonts and are products of more recent deposition.

The hills and mountains of the area are also impacted by the cyclic patterns of erosion and stability. Age and resistance to erosion influence the features of these uplands. The source of most of the material that fills the basins below, the mountains and hills in the area often have only a thin residual soil layer overlying the rock. Portions of the slope that are subject to colluvial deposition are somewhat deeper to rock. Landform terms used to describe map units in these areas are fairly general. It is useful to recognize geomorphic slope components such as summit, shoulder, backslope, footslope, and toeslope positions and slope shape when describing soil occurrences in mountains and hills. These features relate closely with the localized movement of material by downslope movement and redeposition.

The northwest part of the survey area is part of the drainage terminus of the Carson River and of the Humboldt River. These rivers, draining a wide area of the Great Basin empty respectively into the Carson Sink and Humboldt Sink. The sinks are broad depressions that collect the streamflow into evaporative lakes. Salts are concentrated in these basins due to evaporation and water quality is strongly impacted. Other major valleys in the area are also closed depressions. Local runoff into the valleys collects in playas until evaporation and percolation once again dry the area. Use of surface runoff for irrigation is minimal in the area. Local streams and springs that provide a reliable supply of water are used to irrigate on a small scale. Most water for irrigation is from ground water. Quality and depth of the ground water is variable in the area.

The geology of the survey area is variable and complex. The western part of the county is dominated by the broad low valley of the Carson Sink, which is underlain by deposits of Lake Lahontan. The bordering mountain ranges to the

west and south are low relief and underlain largely by Tertiary volcanic and sedimentary units. Pre-Tertiary rocks are extensively exposed east of the Carson Sink in the Stillwater Range, Clan Alpine Mountains, and New Pass Mountains. The eastern valleys are underlain by Quaternary alluvial and lacustrine deposits contemporaneous with western deposits of Lake Lahontan. The eastern mountain ranges are more rugged than the western ranges and have higher relief; the eastern valleys are generally narrower. The oldest rocks occur at the east boundary of the county in the New Pass Mountains (8).

Most outcrops of pre-Tertiary rocks in this area consist of sedimentary and volcanic rocks. These rocks are mainly shale, siltstone, sandstone and limestone, and basaltic tuffs. These rocks are mostly in the Stillwater and Sand Springs Ranges, and the Clan Alpine Mountains. Jacratz, Nayfan, Kram, Attella, Findout, and Itca are typical soils that formed in material weathered from these rocks.

The granitic rocks are chiefly granite, granodiorite, and quartz monzonite. These rocks are mainly late Jurassic to early Tertiary in age. These rocks are mostly in the Sand Springs and Stillwater Ranges. Budiho, Chill, Fubble, Uripnes, and Minneha are typical soils that weathered from these rocks.

The Tertiary aged volcanic rocks in this survey area include basalt, andesite, rhyolite, and welded tuffs. These rocks comprise most of the mountainous areas within the survey area and are found in the Clan Alpine Mountains, Desatoya, and Stillwater Ranges, and along the western edge of the county in the Dead Camel Mountains, and Hot Springs Mountains, and the Truckee Range. Typical soils associated with these rocks are the Downeyville, Stewval, and Blacktop series in the southeast; the Itca, Reluctan, Old Camp, and Jung series in the Desatoya Range and Clan Alpine Mountains; the Singatse, Pirouette, Osobb, Jobpeak, Kram soils in the Stillwater Range; and the Theon, Old Camp, Olac, and Singatse soils in the far western mountains of the county.

The oldest alluvium in the survey area is sediment of Quaternary age. It consists mainly of older gravels, dissected alluvial fans, and areas of pediment gravels. These areas are predominantly around the edges of Edwards Creek and Dixie Valleys, and Fairview Flat. Bango, Chilper, Chuckles, Dun Glen, Genegraf, Hessing, Ricert, Trocken, and Yody are soils typical of these areas.

The youngest material in the area is recent alluvium, basaltic sediments, and dune sand. These materials are found on flood plains, inset fans, and

bolson floors. These materials are found at the lowest points in the survey area in the Carson Sink, Dixie Valley, and Edwards Creek Valley. Hawsley, Slaw, Isalde, and miscellaneous areas such as playas and dune land are associated with this material.

## Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Fallon, Nevada and at Lake Lahontan, Nevada in the period 1929 to 1993 and 1949 to 1993 respectively. Table 2 shows probable dates of the first freeze in fall and the last freeze in the spring. Table 3 provides data on length of growing season.

Growing degree days, shown in Table 1, are equivalent to "heat units". Beginning in the spring, growing degree days accumulate by the amount the average temperature exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze of spring and the first freeze of fall.

The total annual precipitation in Fallon is about 5 inches. Of this, 2.3 inches, or 45 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than .6 inches. The heaviest 1-day rainfall during the period of record was 1.55 inches on June 19, 1977.

Thunderstorms occur on about 10 days each year, and most occur in March and June. The average seasonal snowfall is about 6 inches. The greatest snow depth at any one time during the period of record was 10.5 inches. On the average, 30 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 20 percent. Humidity is higher at night, and the average at dawn is about 20 percent. The sun shines 90 percent of the time in summer and 70 percent in winter. The prevailing wind is from the southwest. Average windspeed is highest, 5 miles per hour, in April.



# Detailed Soil Map Units

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The map units on the detailed maps in Part III of this publication represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings "Use and Management of the Soils" and "Soil Properties."

A map unit delineation on the detailed soil maps represents an area dominated by one or more soils or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, are mapped without including areas of other taxonomic classes. Consequently, map units are made up of the soils or miscellaneous areas for which they are named and some "included" areas that belong to other taxonomic classes.

Most included soils have properties and behavioral characteristics similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the

maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit. The principal hazards and limitations to be considered in planning for specific uses are identified in the tables and narrative in Part II.

## Kinds of Map Units

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Some of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management.



For example, Isolde fine sand, slightly saline is a phase of the Isolde series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or associations. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Map unit 650, Labou-Rock outcrop complex is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Map unit 191, Theon-Singatse-Rock outcrop association is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Playas is an example.

## Acreage and Extent

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

## Headings and Introductory Phases

In the map unit descriptions that follow, a semitabular format is used. In this format the major headings are centered in the column (for example, *Composition*). They identify the information grouped directly below them. Introducing each item of information under the centered heading is a term or phrase (for example, *Major Components*) that identifies or describes the information. Many of the centered headings and introductory terms are self-explanatory; however, some of them need further explanation and are defined in the Glossary. Explanations of the headings and introductory phrases are provided in the following paragraphs, generally in the order in which they are used in the map unit descriptions.

*Composition* is given for the components (soils or miscellaneous areas) identified in the name of the map unit as well as for the contrasting inclusions.

*Contrasting Inclusions* are areas of components that differ sufficiently in use and management from the soils or miscellaneous areas for which the map unit is named. As was explained earlier, inclusions can either be *similar* or *contrasting*. Note that in the *Composition* section a single percentage is provided for a named soil and its similar inclusions because their use and management are similar.

*Map Unit Setting* is given for the entire map unit. This section gives the position on the landscape. The landscape positions given for the entire map unit generally are broader than those given for each component. Below the map unit setting, the position of each component and inclusion is listed, and the physiographic location of each is identified.

*Major Component Description* lists the characteristics of the major components. These include elevation, texture of the surface layer, drainage class, parent material, and climatic data.

*Dominant Present Vegetation* lists the common plants growing on each soil at the present time. The present vegetation may be similar to the potential native plant community, but in some areas it consists of other plants, either cultivated or wild, that dominate the soils in the map unit.

*Ecological Site* is the assigned rangeland or grazed forest land ecological site that identifies a unique potential native plant community. The plant species and production typical of each ecological site are listed by map unit in the section "Rangeland Plants and Woodland Understory." Additional information about these sites is provided under the heading "Rangeland and Grazeable Woodland Resource Management" in Part II of this publication. Further information also can be obtained from the local office of the Natural Resources Conservation Service.

## Map Unit Descriptions

### 100--Budihol-Chill-Rock outcrop association

#### *Composition*

##### **Major Components**

Budihol stony sandy loam, 30 to 50 percent slopes--45 percent  
Chill gravelly sandy loam, 8 to 30 percent slopes--35 percent

Rock outcrop--10 percent

**Contrasting Inclusions**

- Inclusion 1: Uripnes very stony sandy loam, 30 to 50 percent slopes--7 percent  
 Inclusion 2: Bimmer stony sandy loam, 15 to 30 percent slopes--2 percent  
 Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 15 percent slopes--1 percent

**Map Unit Setting**

- Landscape position:* Mountains and intermontane basins  
*Budi hol--Landform:* Mountains; position on slope: upper; aspect: north  
*Chill--Landform:* Mountains; geomorphic position: summit  
*Rock outcrop--Landform:* Mountains  
*Inclusion 1--Landform:* Mountains; position on slope: lower; aspect: south  
*Inclusion 2--Landform:* Pediments; position on slope: lower  
*Inclusion 3--Landform:* Drainageways

**Major Component Description**

**Budi hol Series**

- Elevation:* 4,800 to 6,800 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 100 days  
*Texture:* Stony sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from granitic rocks

**Chill Series**

- Elevation:* 4,800 to 6,800 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 10 percent gravel  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from granitic rocks

**Rock outcrop Miscellaneous Area**

*Elevation:* 4,800 to 6,800 feet

**Dominant Present Vegetation**

- Budi hol:* Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
*Chill:* Indian ricegrass, Wyoming big sagebrush, needlegrass, pine bluegrass, spiny hopsage  
*Rock outcrop:* None  
*Inclusion 1:* Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale, spiny hopsage  
*Inclusion 2:* Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
*Inclusion 3:* Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

**Ecological Site**

- Budi hol:* 027XY007NV  
*Chill:* 027XY008NV  
*Rock outcrop:* None  
*Inclusion 1:* 027XY047NV  
*Inclusion 2:* 027XY018NV  
*Inclusion 3:* 027XY029NV

**102--Budi hol-Minneha-Rock outcrop association**

**Composition**

**Major Components**

- Budi hol* stony sandy loam, 30 to 50 percent slopes--40 percent  
*Minneha* very stony loam, 30 to 50 percent slopes--30 percent  
*Rock outcrop--15 percent*

**Contrasting Inclusions**

- Inclusion 1:* Chill very stony loam, 15 to 30 percent slopes--8 percent  
*Inclusion 2:* Lithic Argixerolls, loamy-skeletal, mixed, mesic, 30 to 50 percent slopes--7 percent

**Map Unit Setting**

- Landscape position:* Mountains  
*Budi hol--Landform:* Mountains; geomorphic position: backslope  
*Minneha--Landform:* Mountains; geomorphic position: backslope; position on slope: upper; aspect: north  
*Rock outcrop--Landform:* Mountains  
*Inclusion 1--Landform:* Mountains; geomorphic position: backslope; position on slope: lower; aspect: south  
*Inclusion 2--Landform:* Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

**Major Component Description**

**Budi hol Series**

- Elevation:* 5,000 to 7,000 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 90 days  
*Texture:* Stony sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from granitic rocks

**Minneha Series**

- Elevation:* 5,000 to 7,000 feet  
*Precipitation:* About 12 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 100 days  
*Surface rock fragments:* 10 percent stones and boulders; 25 percent gravel  
*Texture:* Very stony loam  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Residuum derived from granitic rocks

**Rock outcrop Miscellaneous Area***Elevation:* 5,000 to 7,000 feet***Dominant Present Vegetation***

Budihol: Indian ricegrass, Sandberg bluegrass,  
Thurber needlegrass, Wyoming big sagebrush,  
spiny hopsage  
Minneha: Utah juniper, bluegrass, currant, mountain  
big sagebrush, singleleaf pinyon  
Rock outcrop: None  
Inclusion 1: Indian ricegrass, Wyoming big  
sagebrush, needlegrass, pine bluegrass, spiny  
hopsage  
Inclusion 2: Utah juniper, Wyoming big sagebrush,  
antelope bitterbrush, bluebunch wheatgrass,  
singleleaf pinyon

***Ecological Site***

Budihol: 027XY007NV  
Minneha: 027XY081NV  
Rock outcrop: None  
Inclusion 1: 027XY008NV  
Inclusion 2: 027XY081NV

**110--Bimmer-Chill association*****Composition*****Major Components**

Bimmer stony sandy loam, 8 to 30 percent slopes--  
70 percent  
Chill gravelly sandy loam, 8 to 30 percent slopes--15  
percent

**Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent  
Inclusion 2: Uripnes very stony sandy loam, 4 to 30  
percent slopes--4 percent  
Inclusion 3: Xeric Torriorthents, sandy-skeletal,  
mixed, mesic, 2 to 8 percent slopes--3 percent  
Inclusion 4: Hawsley sand, 2 to 15 percent slopes--  
2 percent

***Map Unit Setting****Landscape position:* Hills and intermontane basinsBimmer--Landform: Hills; geomorphic position:  
backslopeChill--Landform: Hills; geomorphic position:  
backslope; aspect: north

Inclusion 1--Landform: Hills

Inclusion 2--Landform: Hills; geomorphic position:  
backslope; position on slope: lower; aspect:  
south

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Sand sheets

***Major Component Description*****Bimmer Series***Elevation:* 4,400 to 5,400 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 100 days*Surface rock fragments:* 1 percent stones and  
boulders; 25 percent gravel*Texture:* Stony sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from  
granitic rocks**Chill Series***Elevation:* 4,400 to 5,400 feet*Precipitation:* About 8 inches*Air temperature:* About 50 degrees*Frost-free season:* About 100 days*Texture:* Gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from  
granitic rocks***Dominant Present Vegetation***Bimmer: Bailey greasewood, Indian ricegrass, bud  
sagebrush, shadscaleChill: Indian ricegrass, Wyoming big sagebrush,  
needlegrass, pine bluegrass, spiny hopsage

Inclusion 1: None

Inclusion 2: Nevada ephedra, desert needlegrass,  
littleleaf horsebrush, shadscale, spiny hopsageInclusion 3: Indian ricegrass, basin big sagebrush,  
galleta, rubber rabbitbrush, spiny hopsageInclusion 4: Indian ricegrass, Nevada dalea, fourwing  
saltbush, needleandthread, shadscale, winterfat***Ecological Site***

Bimmer: 027XY018NV

Chill: 027XY008NV

Inclusion 1: none

Inclusion 2: 027XY047NV

Inclusion 3: 027XY029NV

Inclusion 4: 027XY009NV

**120--Nemico-Mirkwood-Rock outcrop  
association*****Composition*****Major Components**Nemico very stony sandy loam, 8 to 30 percent  
slopes--45 percentMirkwood extremely stony loam, 30 to 50 percent  
slopes--30 percent

Rock outcrop--10 percent

**Contrasting Inclusions**Inclusion 1: Singatse extremely stony loam, 30 to  
75 percent slopes--7 percentInclusion 2: Old Camp extremely stony loam, 30 to  
50 percent slopes--5 percentInclusion 3: Bluewing very stony loamy sand, 4 to  
30 percent slopes--2 percentInclusion 4: Isolde fine sand, 4 to 15 percent slopes--  
1 percent***Map Unit Setting****Landscape position:* Mountains and intermontane

basins

Nemico--Landform: Mountains; geomorphic position: summit

Mirkwood--Landform: Mountains

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; aspect: north

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Dunes

### **Major Component Description**

#### **Nemico Series**

*Elevation:* 4,600 to 5,900 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 3 percent stones and boulders; 5 percent cobbles; 10 percent gravel

*Texture:* Very stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Mirkwood Series**

*Elevation:* 4,600 to 5,900 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Extremely stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Rock outcrop Miscellaneous Area**

*Elevation:* 4,600 to 5,900 feet

### **Dominant Present Vegetation**

Nemico: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

Mirkwood: Anderson wolfberry, Indian ricegrass, desert needlegrass, littleleaf horsebrush, shadscale

Rock outcrop: None

Inclusion 1: Bailey greasewood, Nevada ephedra, desert needlegrass, shadscale

Inclusion 2: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 3: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 4: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

### **Ecological Site**

Nemico: 027XY015NV

Mirkwood: 027XY017NV

Rock outcrop: None

Inclusion 1: 027XY027NV

Inclusion 2: 027XY007NV

Inclusion 3: 027XY022NV

Inclusion 4: 027XY023NV

## **130--Bedzee-Loomer-Bedwyr association**

### **Composition**

#### **Major Components**

Bedzee very stony loam, 15 to 30 percent slopes--45 percent

Loomer gravelly loam, 8 to 30 percent slopes--25 percent

Bedwyr stony loam, dry, 8 to 30 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Xerollic Haplargids, loamy, mixed, mesic, shallow, 8 to 30 percent slopes--6 percent

Inclusion 2: Durixerollic Haplargids, loamy-skeletal, mixed, mesic, 4 to 8 percent slopes--4 percent

Inclusion 3: Badland--3 percent

Inclusion 4: Rock outcrop--2 percent

### **Map Unit Setting**

*Landscape position:* Hills and intermontane basins

Bedzee--Landform: Hills; geomorphic position: backslope

Loomer--Landform: Hills; geomorphic position: summit; position on slope: upper; aspect: north

Bedwyr--Landform: Hills; geomorphic position: backslope; shape of slope: concave; aspect: south

Inclusion 1--Landform: Fan remnants

Inclusion 2--Landform: Fan remnants

Inclusion 3--Landform: Hills

Inclusion 4--Landform: Hills

### **Major Component Description**

#### **Bedzee Series**

*Elevation:* 4,200 to 5,000 feet

*Precipitation:* About 8 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 100 days

*Surface rock fragments:* 4 percent stones and boulders; *Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

#### **Loomer Series**

*Elevation:* 4,200 to 5,000 feet

*Precipitation:* About 8 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 100 days

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Bedwyr Series**

*Elevation:* 4,200 to 5,000 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 100 days

*Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

### ***Dominant Present Vegetation***

Bedzee: Sandberg bluegrass, Thurber needlegrass, bottlebrush squirreltail  
 Loomer: Sandberg bluegrass, Thurber needlegrass, spiny hopsage  
 Bedwyr: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, basin big sagebrush, needlegrass  
 Inclusion 2: Nevada ephedra, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage  
 Inclusion 3: None  
 Inclusion 4: None

### ***Ecological Site***

Bedzee: 027XY079NV  
 Loomer: 027XY079NV  
 Bedwyr: 027XY018NV  
 Inclusion 1: 027XY045NV  
 Inclusion 2: 027XY008NV  
 Inclusion 3: none  
 Inclusion 4: none

## **140--Hawsley sand, 2 to 8 percent slopes**

### ***Composition***

#### **Major Components**

Hawsley sand, 2 to 8 percent slopes--90 percent

#### **Contrasting Inclusions**

Inclusion 1: Bluewing stony loamy sand, 2 to 8 percent slopes--4 percent  
 Inclusion 2: Isolde fine sand, 4 to 30 percent slopes--3 percent  
 Inclusion 3: Gamgee loamy sand, 4 to 8 percent slopes--2 percent  
 Inclusion 4: Bluewing very stony loamy sand, 2 to 8 percent slopes--1 percent

### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Hawsley--Landform: Sand sheets

Inclusion 1--Landform: Alluvial fans

Inclusion 2--Landform: Dunes

Inclusion 3--Landform: Fan remnants

Inclusion 4--Landform: Drainageways

### ***Major Component Description***

#### **Hawsley Series**

*Elevation:* 3,950 to 4,500 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Sand

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Hawsley: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 4: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

### ***Ecological Site***

Hawsley: 027XY009NV

Inclusion 1: 027XY050NV

Inclusion 2: 027XY023NV

Inclusion 3: 027XY009NV

Inclusion 4: 027XY022NV

## **141--Hawsley-Isolde association**

### ***Composition***

#### **Major Components**

Hawsley sand, 2 to 8 percent slopes--65 percent

Isolde fine sand, 4 to 15 percent slopes--30 percent

#### **Contrasting Inclusions**

Inclusion 1: Bango sandy loam, 2 to 4 percent slopes--3 percent

Inclusion 2: Bluewing very fine sand, 2 to 8 percent slopes--1 percent

Inclusion 3: Isolde fine sand, 15 to 30 percent slopes--1 percent

### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Hawsley--Landform: Sand sheets

Isolde--Landform: Dunes

Inclusion 1--Landform: Lake terraces; shape of slope: concave

Inclusion 2--Landform: Fan remnants

Inclusion 3--Landform: Dunes

### ***Major Component Description***

#### **Hawsley Series**

*Elevation:* 3,900 to 4,400 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Sand

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Water re-worked eolian sand

#### **Isolde Series**

*Elevation:* 3,900 to 4,400 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Fine sand

*Drainage class:* Excessively drained

*Dominant parent material:* Eolian sand

***Dominant Present Vegetation***

Hawsley: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
 Isalde: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

***Ecological Site***

Hawsley: 027XY009NV  
 Isalde: 027XY023NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY022NV  
 Inclusion 3: 027XY023NV

**142--Hawsley-Appian-Ruhe association*****Composition*****Major Components**

Hawsley sand, 2 to 8 percent slopes--35 percent  
 Appian loamy sand, 0 to 2 percent slopes--30 percent  
 Ruhe gravelly loamy sand, 2 to 8 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Ruhe fine sand, 8 to 30 percent slopes--5 percent  
 Inclusion 2: Typic Torriorthents, fine, montmorillonitic (calcareous), mesic, 0 to 4 percent slopes--5 percent  
 Inclusion 3: Rock outcrop, tufa--5 percent

***Map Unit Setting***

*Landscape position:* Bolsons  
 Hawsley--Landform: Sand sheets  
 Appian--Landform: Lake terraces; position on slope: lower  
 Ruhe--Landform: Lake terraces; position on slope: upper  
 Inclusion 1--Landform: Lake terraces; position on slope: upper  
 Inclusion 2--Landform: Lake terraces  
 Inclusion 3--Landform: Lake terraces

***Major Component Description*****Hawsley Series**

*Elevation:* 3,950 to 4,300 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Water re-worked eolian sand

**Appian Series**

*Elevation:* 3,950 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Loamy sand

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Ruhe Series**

*Elevation:* 3,950 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 20 percent gravel

*Texture:* Gravelly loamy sand

*Drainage class:* Well drained

*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

***Dominant Present Vegetation***

Hawsley: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
 Appian: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Ruhe: Bailey greasewood, Indian ricegrass, bud sagebrush, dalea, needleandthread, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, dalea, needleandthread, shadscale  
 Inclusion 2: Black greasewood, inland saltgrass, seepweed, shadscale  
 Inclusion 3: None

***Ecological Site***

Hawsley: 027XY009NV  
 Appian: 027XY018NV  
 Ruhe: 027XY009NV  
 Inclusion 1: 027XY009NV  
 Inclusion 2: 027XY025NV  
 Inclusion 3: none

**143--Hawsley-Gamgee association*****Composition*****Major Components**

Hawsley sand, 2 to 15 percent slopes--55 percent  
 Gamgee stony sandy loam, 2 to 15 percent slopes--30 percent

**Contrasting Inclusions**

Inclusion 1: Gamgee gravelly sand, 2 to 15 percent slopes--7 percent  
 Inclusion 2: Typic Haplargids, loamy, mixed, mesic, shallow, 4 to 30 percent slopes--5 percent  
 Inclusion 3: Isalde fine sand, 4 to 15 percent slopes--3 percent

***Map Unit Setting***

*Landscape position:* Intermontane basins  
 Hawsley--Landform: Sand sheets  
 Gamgee--Landform: Fan remnants

Inclusion 1--Landform: Fan remnants; position on slope: lower  
 Inclusion 2--Landform: Fan remnants; position on slope: upper  
 Inclusion 3--Landform: Dunes

### **Major Component Description**

#### **Hawsley Series**

*Elevation:* 4,400 to 4,800 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Water re-worked eolian sand

#### **Gamgee Series**

*Elevation:* 4,400 to 4,800 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Stony sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

### **Dominant Present Vegetation**

Hawsley: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
 Gamgee: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, galleta, shadscale  
 Inclusion 3: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

### **Ecological Site**

Hawsley: 027XY009NV  
 Gamgee: 027XY015NV  
 Inclusion 1: 027XY009NV  
 Inclusion 2: 027XY015NV  
 Inclusion 3: 027XY023NV

## **144--Hawsley-Theon-Pirouette association**

### **Composition**

#### **Major Components**

Hawsley sand, 4 to 15 percent slopes--35 percent  
 Theon very gravelly sandy loam, 15 to 50 percent slopes--30 percent  
 Pirouette extremely stony fine sandy loam, 4 to 15 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Typic Haplargids, loamy, mixed, mesic,

shallow, 8 to 30 percent slopes--5 percent  
 Inclusion 2: Gamgee, 4 to 15 percent slopes--5 percent  
 Inclusion 3: Isolde fine sand, 4 to 30 percent slopes--3 percent  
 Inclusion 4: Rock outcrop--2 percent

### **Map Unit Setting**

*Landscape position:* Hills and intermontane basins  
 Hawsley--Landform: Sand sheets  
 Theon--Landform: Hills; geomorphic position: backslope  
 Pirouette--Landform: Hills; geomorphic position: summit  
 Inclusion 1--Landform: Hills; geomorphic position: backslope; position on slope: lower  
 Inclusion 2--Landform: Fan remnants  
 Inclusion 3--Landform: Dunes; position on slope: lower  
 Inclusion 4--Landform: Hills

### **Major Component Description**

#### **Hawsley Series**

*Elevation:* 4,400 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Water re-worked eolian sand

#### **Theon Series**

*Elevation:* 4,400 to 5,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 5 percent cobbles; 40 percent gravel  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### **Pirouette Series**

*Elevation:* 4,400 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Extremely stony fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

### **Dominant Present Vegetation**

Hawsley: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
 Theon: Bailey greasewood, bud sagebrush, desert needlegrass, littleleaf horsebrush, shadscale  
 Pirouette: Bailey greasewood, Indian ricegrass,

bottlebrush squirreltail, shadscale, spiny hopsage, winterfat

Inclusion 1: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, spiny hopsage, winterfat

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

Inclusion 3: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

Inclusion 4: None

#### ***Ecological Site***

Hawsley: 027XY009NV

Theon: 027XY019NV

Pirouette: 027XY018NV

Inclusion 1: 027XY009NV

Inclusion 2: 027XY015NV

Inclusion 3: 027XY023NV

Inclusion 4: none

### **146--Hawsley-Juva association**

#### ***Composition***

##### **Major Components**

Hawsley sand, 0 to 2 percent slopes--65 percent

Juva loam, 0 to 2 percent slopes--25 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing cobbly loamy sand, 0 to 2 percent slopes--7 percent

Inclusion 2: Typic Camborthids, fine-loamy, mixed, mesic, 0 to 2 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Bolsons

Hawsley--Landform: Sand sheets

Juva--Landform: Lake terraces

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Stream terraces

#### ***Major Component Description***

##### **Hawsley Series**

*Elevation:* 4,200 to 4,400 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Sand

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Water re-worked eolian sand

##### **Juva Series**

*Elevation:* 4,200 to 4,400 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Hawsley: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat

Juva: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 2: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale, winterfat

#### ***Ecological Site***

Hawsley: 027XY009NV

Juva: 027XY018NV

Inclusion 1: 027XY022NV

Inclusion 2: 027XY018NV

### **147--Hawsley-Celeton-Bluewing association**

#### ***Composition***

##### **Major Components**

Hawsley sand, 2 to 8 percent slopes--45 percent

Celeton cobbly sandy loam, 2 to 8 percent slopes--25 percent

Bluewing gravelly sandy loam, 2 to 8 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Trocken gravelly loam, 2 to 8 percent slopes--5 percent

Inclusion 2: Roic very gravelly fine sandy loam, 4 to 15 percent slopes--5 percent

#### ***Map Unit Setting***

*Landscape position:* Hills and intermontane basins

Hawsley--Landform: Sand sheets

Celeton--Landform: Hills; geomorphic position: backslope

Bluewing--Landform: Alluvial fans

Inclusion 1--Landform: Beach terraces; geomorphic position: footslope

Inclusion 2--Landform: Hills; geomorphic position: backslope

#### ***Major Component Description***

##### **Hawsley Series**

*Elevation:* 4,200 to 5,100 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Sand

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

##### **Celeton Series**

*Elevation:* 4,200 to 5,100 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Cobbly sandy loam



*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from diatomite

#### **Bluewing Series**

*Elevation:* 4,200 to 5,100 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly sandy loam

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Hawsley: Indian ricegrass, Nevada dalea, fourwing saltbush, shadscale

Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat

Bluewing: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Bailey greasewood, Cooper wolfberry, Nevada dalea, bud sagebrush, littleleaf horsebrush, shadscale

#### ***Ecological Site***

Hawsley: 027XY009NV

Celeton: 027XY027NV

Bluewing: 027XY050NV

Inclusion 1: 027XY050NV

Inclusion 2: 027XY027NV

### **150--Buckaroo-Bluewing association**

#### ***Composition***

##### **Major Components**

Buckaroo stony fine sandy loam, 4 to 15 percent slopes--70 percent

Bluewing stony loamy sand, 4 to 15 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing very cobbly loamy sand, 2 to 15 percent slopes--5 percent

Inclusion 2: Duric Natrargids, fine-loamy, mixed, mesic, 8 to 30 percent slopes--5 percent

Inclusion 3: Typic Nadurargids, fine, montmorillonitic, mesic, 8 to 30 percent slopes--5 percent

#### ***Map Unit Setting***

*Landscape position:* Fan piedmonts

Buckaroo--Landform: Fan remnants

Bluewing--Landform: Fan aprons

Inclusion 1--Landform: Inset fans; position on slope: lower

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Inclusion 3--Landform: Fan remnants; position on slope: upper

#### ***Major Component Description***

##### **Buckaroo Series**

*Elevation:* 4,400 to 5,200 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 2 percent stones and boulders; 5 percent cobbles; 25 percent gravel

*Texture:* Stony fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

##### **Bluewing Series**

*Elevation:* 4,400 to 5,200 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Stony loamy sand

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Buckaroo: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Bluewing: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 2: Indian ricegrass, bud sagebrush, galleta, spiny hopsage, winterfat

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### ***Ecological Site***

Buckaroo: 027XY018NV

Bluewing: 027XY050NV

Inclusion 1: 027XY022NV

Inclusion 2: 029XY046NV

Inclusion 3: 027XY018NV

### **152--Buckaroo-Watoopah-Rezave association**

#### ***Composition***

##### **Major Components**

Buckaroo stony fine sandy loam, 4 to 15 percent slopes--50 percent

Watoopah sand, 4 to 8 percent slopes--20 percent

Rezave very stony fine sandy loam, 4 to 15 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Singatse stony loam, 15 to 30 percent slopes--8 percent

Inclusion 2: Rock outcrop--4 percent

Inclusion 3: Old Camp very cobbly loam, 15 to 30 percent slopes--3 percent

**Map Unit Setting**

*Landscape position:* Hills and intermontane basins

Buckaroo--Landform: Fan remnants

Watoopah--Landform: Fan remnants; position on slope: lower

Rezave--Landform: Hills

Inclusion 1--Landform: Hills; geomorphic position: backslope; position on slope: lower

Inclusion 2--Landform: Hills; geomorphic position: summit

Inclusion 3--Landform: Hills; geomorphic position: backslope; aspect: north

**Major Component Description****Buckaroo Series**

*Elevation:* 5,000 to 6,100 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Stony fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

**Watoopah Series**

*Elevation:* 5,000 to 6,100 feet

*Precipitation:* About 8 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Sand

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

**Rezave Series**

*Elevation:* 5,000 to 6,100 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 5 percent stones and boulders; 10 percent cobbles; 4 percent gravel

*Texture:* Very stony fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Dominant Present Vegetation**

Buckaroo: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Watoopah: Indian ricegrass, Wyoming big sagebrush, needleandthread, western wheatgrass

Rezave: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: None

Inclusion 3: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

**Ecological Site**

Buckaroo: 027XY018NV

Watoopah: 027XY045NV

Rezave: 027XY018NV

Inclusion 1: 027XY027NV

Inclusion 2: none

Inclusion 3: 027XY007NV

**153--Buckaroo-Rednik-Bluewing association****Composition****Major Components**

Buckaroo very gravelly very fine sandy loam, 4 to 15 percent slopes--50 percent

Rednik very gravelly sandy loam, 4 to 15 percent slopes--30 percent

Bluewing very gravelly loamy sand, 4 to 8 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Pineval very gravelly loam, 4 to 15 percent slopes--5 percent

**Map Unit Setting**

*Landscape position:* Fan piedmonts

Buckaroo--Landform: Fan remnants; position on slope: upper

Rednik--Landform: Fan remnants; position on slope: lower

Bluewing--Landform: Drainageways

Inclusion 1--Landform: Fan remnants; geomorphic position: backslope

**Major Component Description****Buckaroo Series**

*Elevation:* 3,800 to 4,700 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

**Rednik Series**

*Elevation:* 3,800 to 4,700 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Bluewing Series**

*Elevation:* 3,800 to 4,700 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loamy sand

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Dominant Present Vegetation**

Buckaroo: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Rednik: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Bluewing: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 1: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass

**Ecological Site**

Buckaroo: 027XY018NV  
 Rednik: 027XY018NV  
 Bluewing: 027XY022NV  
 Inclusion 1: 027XY008NV

**154--Buckaroo-Rednik-Genegraf association****Composition****Major Components**

Buckaroo very gravelly very fine sandy loam, 4 to 8 percent slopes--35 percent  
 Rednik very gravelly sandy loam, 4 to 8 percent slopes--25 percent  
 Genegraf gravelly loam, 4 to 8 percent slopes--25 percent

**Contrasting Inclusions**

Inclusion 1: Typic Nadurargids, fine, montmorillonitic, mesic, 4 to 15 percent slopes--6 percent  
 Inclusion 2: Bluewing very cobbly loamy sand, 4 to 15 percent slopes--5 percent  
 Inclusion 3: Trocken very gravelly loam, 15 to 30 percent slopes--4 percent

**Map Unit Setting**

**Landscape position:** Fan piedmonts  
 Buckaroo--Landform: Fan remnants; position on slope: upper  
 Rednik--Landform: Fan remnants; position on slope: lower  
 Genegraf--Landform: Fan remnants  
 Inclusion 1--Landform: Fan remnants  
 Inclusion 2--Landform: Drainageways  
 Inclusion 3--Landform: Fan remnants; geomorphic position: backslope

**Major Component Description****Buckaroo Series**

**Elevation:** 3,800 to 4,700 feet  
**Precipitation:** About 5 inches  
**Air temperature:** About 50 degrees  
**Frost-free season:** About 120 days  
**Texture:** Very gravelly very fine sandy loam  
**Drainage class:** Well drained  
**Dominant parent material:** Alluvium derived from volcanic rocks

**Rednik Series**

**Elevation:** 3,800 to 4,700 feet

**Precipitation:** About 6 inches

**Air temperature:** About 51 degrees

**Frost-free season:** About 120 days

**Texture:** Very gravelly sandy loam

**Drainage class:** Well drained

**Dominant parent material:** Alluvium derived from mixed rocks

**Genegraf Series**

**Elevation:** 3,800 to 4,700 feet

**Precipitation:** About 5 inches

**Air temperature:** About 52 degrees

**Frost-free season:** About 120 days

**Texture:** Gravelly loam

**Drainage class:** Well drained

**Dominant parent material:** Alluvium derived from volcanic rocks

**Dominant Present Vegetation**

Buckaroo: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Rednik: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale

**Ecological Site**

Buckaroo: 027XY018NV  
 Rednik: 027XY018NV  
 Genegraf: 027XY018NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY022NV  
 Inclusion 3: 027XY018NV

**155--Buckaroo-Genegraf-Pineval association****Composition****Major Components**

Buckaroo very gravelly very fine sandy loam, 2 to 8 percent slopes--35 percent  
 Genegraf very gravelly sandy loam, 2 to 8 percent slopes--35 percent  
 Pineval gravelly loam, 2 to 4 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--7 percent  
 Inclusion 2: Nemico stony loam, 4 to 8 percent slopes--5 percent  
 Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 4 to 8 percent slopes--3 percent

**Map Unit Setting***Landscape position:* Fan piedmonts*Buckaroo--Landform:* Fan remnants; position on slope: upper*Genegraf--Landform:* Fan remnants; position on slope: lower*Pineval--Landform:* Fan remnants; position on slope: lower*Inclusion 1--Landform:* Inset fans; position on slope: lower*Inclusion 2--Landform:* Fan remnants*Inclusion 3--Landform:* Fan aprons**Major Component Description****Buckaroo Series***Elevation:* 3,800 to 5,000 feet*Precipitation:* About 5 inches*Air temperature:* About 50 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly very fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from volcanic rocks**Genegraf Series***Elevation:* 3,800 to 5,000 feet*Precipitation:* About 5 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from volcanic rocks**Pineval Series***Elevation:* 3,800 to 5,000 feet*Precipitation:* About 9 inches*Air temperature:* About 49 degrees*Frost-free season:* About 110 days*Texture:* Gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from volcanic rocks**Dominant Present Vegetation***Buckaroo:* Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale*Genegraf:* Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage*Pineval:* Indian ricegrass, Wyoming big sagebrush*Inclusion 1:* Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage*Inclusion 2:* Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale*Inclusion 3:* Indian ricegrass, basin big sagebrush, galleta, rubber rabbitbrush, spiny hopsage**Ecological Site***Buckaroo:* 027XY018NV*Genegraf:* 027XY018NV*Pineval:* 027XY008NV*Inclusion 1:* 027XY022NV*Inclusion 2:* 027XY013NV*Inclusion 3:* 027XY029NV**158--Buckaroo-Celeton-Wholan association****Composition****Major Components***Buckaroo* very gravelly very fine sandy loam, 4 to 15 percent slopes--50 percent*Celeton* very gravelly loam, 8 to 30 percent slopes--25 percent*Wholan* very fine sandy loam, 2 to 4 percent slopes--10 percent**Contrasting Inclusions***Inclusion 1:* Genegraf very gravelly loam, 4 to 15 percent slopes--8 percent*Inclusion 2:* Barnmot gravelly clay, 8 to 30 percent slopes--4 percent*Inclusion 3:* Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 2 to 8 percent slopes--3 percent**Map Unit Setting***Landscape position:* Hills and intermontane basins*Buckaroo--Landform:* Fan remnants; geomorphic position: summit*Celeton--Landform:* Hills*Wholan--Landform:* Inset fans*Inclusion 1--Landform:* Fan remnants; position on slope: lower*Inclusion 2--Landform:* Hills; geomorphic position: backslope; position on slope: lower*Inclusion 3--Landform:* Drainageways**Major Component Description****Buckaroo Series***Elevation:* 4,900 to 5,400 feet*Precipitation:* About 5 inches*Air temperature:* About 50 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly very fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from volcanic rocks**Celeton Series***Elevation:* 4,900 to 5,400 feet*Precipitation:* About 5 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from diatomite**Wholan Series***Elevation:* 4,900 to 5,400 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### ***Dominant Present Vegetation***

Buckaroo: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat

Wholan: Indian ricegrass, bud sagebrush, fourwing saltbush, winterfat

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage

Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Inclusion 3: Indian ricegrass, basin big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Buckaroo: 027XY018NV

Celeton: 027XY027NV

Wholan: 027XY014NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY027NV

Inclusion 3: 027XY029NV

### **159--Buckaroo-Genegraf association**

#### ***Composition***

##### **Major Components**

Buckaroo extremely stony sandy loam, 4 to 15 percent slopes--55 percent

Genegraf very gravelly sandy loam, 4 to 15 percent slopes--30 percent

##### **Contrasting Inclusions**

Inclusion 1: Trocken very gravelly loam, 4 to 15 percent slopes--9 percent

Inclusion 2: Aridic Haploxererts, fine, montmorillonitic, mesic, 4 to 15 percent slopes--6 percent

#### ***Map Unit Setting***

*Landscape position:* Fan piedmonts

Buckaroo--Landform: Fan remnants; position on slope: upper

Genegraf--Landform: Fan remnants; position on slope: lower

Inclusion 1--Landform: Fan remnants; geomorphic position: backslope

Inclusion 2--Landform: Depressions; shape of slope: concave

#### ***Major Component Description***

##### **Buckaroo Series**

*Elevation:* 4,000 to 5,500 feet

*Precipitation:* About 5 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Extremely stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

#### **Genegraf Series**

*Elevation:* 4,000 to 5,500 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Buckaroo: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage

Inclusion 1: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale

Inclusion 2: Wyoming big sagebrush, bottlebrush squirreltail, littleleaf horsebrush, low sagebrush

#### ***Ecological Site***

Buckaroo: 027XY018NV

Genegraf: 027XY018NV

Inclusion 1: 027XY018NV

Inclusion 2: 026XY027NV

### **160--Singatse-Rock outcrop association**

#### ***Composition***

##### **Major Components**

Singatse very gravelly loam, 30 to 75 percent slopes--65 percent

Rock outcrop--25 percent

##### **Contrasting Inclusions**

Inclusion 1: Theon very stony loam, 8 to 30 percent slopes--5 percent

Inclusion 2: Theon extremely stony loam, 30 to 50 percent slopes--3 percent

Inclusion 3: Old Camp very stony loam, 30 to 50 percent slopes--2 percent

#### ***Map Unit Setting***

*Landscape position:* Hills

Singatse--Landform: Hills; geomorphic position: backslope

Rock outcrop--Landform: Hills

Inclusion 1--Landform: Hills; geomorphic position: summit

Inclusion 2--Landform: Hills; geomorphic position: backslope; aspect: south

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

**Major Component Description****Singatse Series***Elevation:* 4,200 to 6,500 feet*Precipitation:* About 6 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly loam*Drainage class:* Somewhat excessively drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Rock outcrop Miscellaneous Area***Elevation:* 4,200 to 6,500 feet**Dominant Present Vegetation**

Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Rock outcrop: None

Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 2: Indian ricegrass, desert needlegrass, littleleaf horsebrush

Inclusion 3: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

**Ecological Site**

Singatse: 027XY027NV

Rock outcrop: None

Inclusion 1: 027XY019NV

Inclusion 2: 027XY017NV

Inclusion 3: 027XY007NV

**161--Singatse-Uripnes-Rock outcrop association****Composition****Major Components**

Singatse very gravelly loam, 30 to 50 percent slopes--50 percent

Uripnes very stony sandy loam, 30 to 50 percent slopes--25 percent

Rock outcrop--10 percent

**Contrasting Inclusions**

Inclusion 1: Theon extremely gravelly loam, 15 to 50 percent slopes--7 percent

Inclusion 2: Bluewing gravelly loamy sand, 2 to 8 percent slopes--5 percent

Inclusion 3: Bluewing stony loamy sand, 2 to 8 percent slopes--3 percent

**Map Unit Setting***Landscape position:* Mountains

Singatse--Landform: Mountains

Uripnes--Landform: Mountains; geomorphic position: backslope

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains; aspect: north

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Alluvial fans

**Major Component Description****Singatse Series***Elevation:* 4,500 to 5,100 feet*Precipitation:* About 6 inches*Air temperature:* About 51 degrees*Frost-free season:* About 110 days*Texture:* Very gravelly loam*Drainage class:* Somewhat excessively drained*Dominant parent material:* Residuum derived from mixed rocks**Uripnes Series***Elevation:* 4,500 to 5,100 feet*Precipitation:* About 7 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Very stony sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from granitic rocks**Rock outcrop Miscellaneous Area***Elevation:* 4,500 to 5,100 feet**Dominant Present Vegetation**

Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Uripnes: Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale, spiny hopsage

Rock outcrop: None

Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 3: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

**Ecological Site**

Singatse: 027XY027NV

Uripnes: 027XY047NV

Rock outcrop: None

Inclusion 1: 027XY027NV

Inclusion 2: 027XY022NV

Inclusion 3: 027XY050NV

**162--Singatse-Theon-Rezave association****Composition****Major Components**

Singatse very gravelly loam, 30 to 50 percent slopes--50 percent

Theon very gravelly sandy loam, 8 to 30 percent slopes--25 percent

Rezave stony loam, 15 to 30 percent slopes--10 percent

**Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent

Inclusion 2: Old Camp very gravelly loam, 30 to 50 percent slopes--5 percent

Inclusion 3: Bluewing very gravelly loamy sand, 2 to 15 percent slopes--2 percent

Inclusion 4: Barnmot very gravelly clay, 15 to 50 percent slopes--2 percent

### **Map Unit Setting**

*Landscape position:* Mountains  
 Singatse--Landform: Mountains; geomorphic position: backslope; shape of slope: convex  
 Theon--Landform: Mountains; geomorphic position: summit; position on slope: upper  
 Rezave--Landform: Mountains; geomorphic position: summit; position on slope: lower  
 Inclusion 1--Landform: Mountains  
 Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north  
 Inclusion 3--Landform: Drainageways  
 Inclusion 4--Landform: Mountains; geomorphic position: backslope

### **Major Component Description**

#### **Singatse Series**

*Elevation:* 4,900 to 6,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly loam  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Theon Series**

*Elevation:* 4,900 to 6,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### **Rezave Series**

*Elevation:* 4,900 to 6,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 110 days  
*Texture:* Stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### **Dominant Present Vegetation**

Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale  
 Theon: Bailey greasewood, bud sagebrush, desert needlegrass, shadscale  
 Rezave: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: None  
 Inclusion 2: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Inclusion 3: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 4: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

### **Ecological Site**

Singatse: 027XY027NV  
 Theon: 027XY019NV  
 Rezave: 027XY018NV  
 Inclusion 1: none  
 Inclusion 2: 027XY007NV  
 Inclusion 3: 027XY022NV  
 Inclusion 4: 027XY027NV

## **164--Singatse-Loomer association**

### **Composition**

#### **Major Components**

Singatse very gravelly sandy loam, 15 to 50 percent slopes--45 percent  
 Loomer gravelly loam, 15 to 50 percent slopes--40 percent

#### **Contrasting Inclusions**

Inclusion 1: Typic Haplargids, coarse-loamy, mixed, mesic, 15 to 30 percent slopes--6 percent  
 Inclusion 2: Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 30 to 50 percent slopes--4 percent  
 Inclusion 3: Theon very stony loam, 15 to 30 percent slopes--3 percent  
 Inclusion 4: Rock outcrop--2 percent

### **Map Unit Setting**

*Landscape position:* Mountains  
 Singatse--Landform: Mountains; aspect: south  
 Loomer--Landform: Mountains; aspect: north  
 Inclusion 1--Landform: Mountains; geomorphic position: footslope  
 Inclusion 2--Landform: Mountains; geomorphic position: shoulder; position on slope: upper  
 Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex  
 Inclusion 4--Landform: Mountains

### **Major Component Description**

#### **Singatse Series**

*Elevation:* 4,400 to 5,800 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Loomer Series**

*Elevation:* 4,400 to 5,800 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

### ***Dominant Present Vegetation***

Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Loomer: Sandberg bluegrass, Thurber needlegrass, spiny hopsage

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 2: Sandberg bluegrass, Thurber needlegrass, pine bluegrass

Inclusion 3: Bailey greasewood, Indian ricegrass, littleleaf horsebrush, shadscale

Inclusion 4: None

### ***Ecological Site***

Singatse: 027XY027NV

Loomer: 027XY079NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY079NV

Inclusion 3: 027XY019NV

Inclusion 4: none

## **170--Isolde-Dune land-Pirouette association**

### ***Composition***

#### **Major Components**

Isolde fine sand, 8 to 30 percent slopes--35 percent  
Dune land fine sand, 0 to 30 percent slopes--30 percent

Pirouette very stony loamy sand, 4 to 30 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Hawsley sand, 4 to 15 percent slopes--8 percent

Inclusion 2: Theon extremely gravelly loam, 30 to 50 percent slopes--4 percent

Inclusion 3: Rock outcrop--3 percent

### ***Map Unit Setting***

*Landscape position:* Plateaus and adjacent bolsons

Isolde--Landform: Dunes

Dune land--Landform: Dunes

Pirouette--Landform: Plateaus; geomorphic position: summit

Inclusion 1--Landform: Sand sheets

Inclusion 2--Landform: Plateaus; geomorphic position: backslope

Inclusion 3--Landform: Plateaus

### ***Major Component Description***

#### **Isolde Series**

*Elevation:* 4,200 to 5,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Fine sand

*Drainage class:* Excessively drained

*Dominant parent material:* Eolian sand

## **Dune land Miscellaneous Area**

*Elevation:* 4,200 to 5,300 feet

*Texture:* Fine sand

*Drainage class:* Excessively drained

### **Pirouette Series**

*Elevation:* 4,200 to 5,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very stony loamy sand

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### ***Dominant Present Vegetation***

Isolde: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

Dune land: None

Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, winterfat

Inclusion 1: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat

Inclusion 2: Bailey greasewood, Indian ricegrass, desert needlegrass, shadscale

Inclusion 3: None

### ***Ecological Site***

Isolde: 027XY023NV

Pirouette: 027XY018NV

Dune land: None

Inclusion 1: 027XY009NV

Inclusion 2: 027XY027NV

Inclusion 3: none

## **171--Isolde-Parran-Appian association**

### ***Composition***

#### **Major Components**

Isolde fine sand, 4 to 15 percent slopes--45 percent

Parran silty clay, 0 to 2 percent slopes--20 percent

Appian fine sand, 0 to 2 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Playas--8 percent

Inclusion 2: Typic Torriorthents, fine-silty, mixed, mesic, 4 to 30 percent slopes--5 percent

Inclusion 3: Hawsley sand, 2 to 8 percent slopes--2 percent

### ***Map Unit Setting***

*Landscape position:* Bolsons

Isolde--Landform: Dunes

Parran--Landform: Lake terraces

Appian--Landform: Spits

Inclusion 1--Landform: Playas; shape of slope: concave

Inclusion 2--Landform: Parna dunes

Inclusion 3--Landform: Sand sheets



**Major Component Description****Isolde Series**

*Elevation:* 3,850 to 4,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Fine sand  
*Drainage class:* Excessively drained  
*Dominant parent material:* Eolian sand

**Parran Series**

*Elevation:* 3,850 to 4,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 40 percent gravel  
*Texture:* Silty clay  
*Drainage class:* Somewhat poorly drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

**Appian Series**

*Elevation:* 3,800 to 4,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Fine sand  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Dominant Present Vegetation**

Isolde: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
 Parran: Alkali sacaton, alkali seepweed, basin wildrye, black greasewood, inland saltgrass  
 Appian: Bailey greasewood, Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: None  
 Inclusion 2: Indian ricegrass, black greasewood, hairy horsebrush  
 Inclusion 3: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat

**Ecological Site**

Isolde: 027XY016NV  
 Parran: 027XY025NV  
 Appian: 027XY024NV  
 Inclusion 1: none  
 Inclusion 2: 027XY016NV  
 Inclusion 3: 027XY009NV

**172--Isolde-Pirouette-Hawsley association****Composition****Major Components**

Isolde fine sand, 8 to 30 percent slopes--35 percent  
 Pirouette very stony loamy sand, 2 to 15 percent slopes--35 percent

Hawsley sand, 4 to 15 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Osobb very stony loamy sand, 15 to 50 percent slopes--5 percent  
 Inclusion 2: Isolde fine sand, 4 to 15 percent slopes--3 percent  
 Inclusion 3: Lithic Haplargids, loamy, mixed, mesic, 15 to 50 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Plateaus and adjacent bolsons  
 Isolde--Landform: Dunes  
 Pirouette--Landform: Plateaus; geomorphic position: summit  
 Hawsley--Landform: Sand sheets  
 Inclusion 1--Landform: Plateaus; geomorphic position: backslope  
 Inclusion 2--Landform: Dunes; position on slope: lower  
 Inclusion 3--Landform: Plateaus; geomorphic position: backslope; position on slope: upper

**Major Component Description****Isolde Series**

*Elevation:* 4,000 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Fine sand  
*Drainage class:* Excessively drained  
*Dominant parent material:* Eolian sand

**Pirouette Series**

*Elevation:* 4,000 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very stony loamy sand  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Hawsley Series**

*Elevation:* 4,000 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

**Dominant Present Vegetation**

Isolde: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread  
 Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, winterfat  
 Hawsley: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
 Inclusion 1: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale

Inclusion 2: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
 Inclusion 3: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale, spiny hopsage

### ***Ecological Site***

Isolde: 027XY023NV  
 Pirouette: 027XY018NV  
 Hawsley: 027XY009NV  
 Inclusion 1: 027XY027NV  
 Inclusion 2: 027XY016NV  
 Inclusion 3: 027XY019NV

## **173--Isolde fine sand, slightly saline, 2 to 15 percent slopes**

### ***Composition***

#### **Major Components**

Isolde fine sand, 2 to 15 percent slopes--90 percent

#### **Contrasting Inclusions**

Inclusion 1: Patna sand, 2 to 15 percent slopes--10 percent

### ***Map Unit Setting***

*Landscape position:* Intermontane basins  
 Isolde--Landform: Dunes  
 Inclusion 1--Landform: Fan remnants

### ***Major Component Description***

#### **Isolde Series**

*Elevation:* 4,200 to 5,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Fine sand  
*Drainage class:* Excessively drained  
*Dominant parent material:* Eolian sand

### ***Dominant Present Vegetation***

Isolde: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, Nevada dalea, fourwing saltbush

### ***Ecological Site***

Isolde: 027XY016NV  
 Inclusion 1: 027XY009NV

## **174--Isolde-Ragtown association**

### ***Composition***

#### **Major Components**

Isolde fine sand, 4 to 15 percent slopes--70 percent  
 Ragtown silt loam, 0 to 2 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Umler silty clay loam, 0 to 2 percent slopes--5 percent  
 Inclusion 2: Playas--5 percent

### ***Map Unit Setting***

*Landscape position:* Bolsons  
 Isolde--Landform: Dunes  
 Ragtown--Landform: Lake terraces  
 Inclusion 1--Landform: Lake terraces; position on slope: lower; shape of slope: concave  
 Inclusion 2--Landform: Playas; shape of slope: concave

### ***Major Component Description***

#### **Isolde Series**

*Elevation:* 3,800 to 4,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Fine sand  
*Drainage class:* Excessively drained  
*Dominant parent material:* Eolian sand

#### **Ragtown Series**

*Elevation:* 3,800 to 4,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silt loam  
*Drainage class:* Moderately well drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

### ***Dominant Present Vegetation***

Isolde: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
 Ragtown: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed, shadscale  
 Inclusion 1: Black greasewood, inland saltgrass, seepweed, shadscale  
 Inclusion 2: None

### ***Ecological Site***

Isolde: 027XY016NV  
 Ragtown: 027XY025NV  
 Inclusion 1: 027XY025NV  
 Inclusion 2: none

## **180--Bluewing-Inmo association**

### ***Composition***

#### **Major Components**

Bluewing stony loamy sand, 2 to 8 percent slopes--45 percent  
 Inmo gravelly sandy loam, 2 to 8 percent slopes--40 percent

#### **Contrasting Inclusions**

Inclusion 1: Granshaw very gravelly sandy loam, 2 to 8 percent slopes--9 percent  
 Inclusion 2: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--3 percent  
 Inclusion 3: Hawsley sand, 2 to 8 percent slopes--3 percent

**Map Unit Setting***Landscape position:* Fan piedmonts*Bluewing--Landform:* Inset fans; position on slope: lower*Inmo--Landform:* Inset fans; position on slope: upper*Inclusion 1--Landform:* Fan remnants*Inclusion 2--Landform:* Drainageways*Inclusion 3--Landform:* Sand sheets; position on slope: lower**Major Component Description****Bluewing Series***Elevation:* 4,000 to 4,600 feet*Precipitation:* About 5 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Stony loamy sand*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from mixed rocks**Inmo Series***Elevation:* 4,000 to 4,600 feet*Precipitation:* About 5 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Surface rock fragments:* 20 percent gravel*Texture:* Gravelly sandy loam*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from granitic rocks**Dominant Present Vegetation***Bluewing:* Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale*Inmo:* Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale*Inclusion 1:* Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat*Inclusion 2:* Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage*Inclusion 3:* Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat**Ecological Site***Bluewing:* 027XY050NV*Inmo:* 027XY013NV*Inclusion 1:* 027XY018NV*Inclusion 2:* 027XY022NV*Inclusion 3:* 027XY009NV**181--Bluewing very gravelly loamy sand, 2 to 8 percent slopes****Composition****Major Components***Bluewing very gravelly loamy sand,* 2 to 8 percent slopes--95 percent**Contrasting Inclusions***Inclusion 1:* Bluewing very gravelly loamy sand, 2 to 8 percent slopes--5 percent**Map Unit Setting***Landscape position:* Intermontane basins*Bluewing--Landform:* Drainageways*Inclusion 1--Landform:* Inset fans**Major Component Description****Bluewing Series***Elevation:* 3,900 to 4,800 feet*Precipitation:* About 5 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly loamy sand*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from mixed rocks**Dominant Present Vegetation***Bluewing:* Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage*Inclusion 1:* Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale**Ecological Site***Bluewing:* 027XY022NV*Inclusion 1:* 027XY050NV**184--Bluewing-Pineval association****Composition****Major Components***Bluewing very gravelly loamy sand,* 4 to 8 percent slopes--50 percent*Bluewing stony loamy sand,* 4 to 8 percent slopes--20 percent*Pineval very cobbly loam,* 4 to 8 percent slopes--15 percent**Contrasting Inclusions***Inclusion 1:* Isolde fine sand, 4 to 8 percent slopes--8 percent*Inclusion 2:* Trocken very cobbly loam, 4 to 8 percent slopes--5 percent*Inclusion 3:* Xerollic Camborthids, loamy-skeletal, mixed, mesic, 2 to 4 percent slopes--2 percent**Map Unit Setting***Landscape position:* Fan piedmonts*Bluewing--Landform:* Drainageways*Bluewing--Landform:* Inset fans; position on slope: lower*Pineval--Landform:* Fan remnants; position on slope: upper*Inclusion 1--Landform:* Dunes*Inclusion 2--Landform:* Fan remnants; geomorphic position: backslope; position on slope: lower*Inclusion 3--Landform:* Inset fans; position on slope: lower

**Major Component Description****Bluewing Series***Elevation:* 3,800 to 5,000 feet*Precipitation:* About 6 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly loamy sand*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from mixed rocks**Bluewing Series***Elevation:* 3,800 to 5,000 feet*Precipitation:* About 7 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Stony loamy sand*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from mixed rocks**Pineval Series***Elevation:* 3,800 to 5,000 feet*Precipitation:* About 8 inches*Air temperature:* About 49 degrees*Frost-free season:* About 110 days*Texture:* Very cobbly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from volcanic rocks**Dominant Present Vegetation**

Bluewing: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Bluewing: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Pineval: Nevada ephedra, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Inclusion 1: Indian ricegrass, black greasewood, fourwing saltbush, shadscale

Inclusion 2: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, seepweed, shadscale

Inclusion 3: Indian ricegrass, bud sagebrush, winterfat

**Ecological Site**

Bluewing: 027XY022NV

Bluewing: 027XY050NV

Pineval: 027XY008NV

Inclusion 1: 027XY016NV

Inclusion 2: 027XY024NV

Inclusion 3: 027XY014NV

**185--Bluewing-Toulon-Rock outcrop association****Composition****Major Components**

Bluewing gravelly sandy loam, 2 to 8 percent slopes--50 percent

Toulon very gravelly loam, 2 to 8 percent slopes--25 percent

Rock outcrop--15 percent

**Contrasting Inclusions**

Inclusion 1: Bluewing very gravelly loamy sand, 0 to 2 percent slopes--5 percent

Inclusion 2: Toulon very gravelly silt loam, 2 to 4 percent slopes--3 percent

Inclusion 3: Mazuma loamy fine sand, 0 to 2 percent slopes--2 percent

**Map Unit Setting***Landscape position:* Intermontane basins

Bluewing--Landform: Alluvial fans

Toulon--Landform: Longshore bars

Rock outcrop--Landform: Lake terraces

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Longshore bars; position on slope: lower

Inclusion 3--Landform: Lagoons; position on slope: lower

**Major Component Description****Bluewing Series***Elevation:* 3,800 to 4,500 feet*Precipitation:* About 7 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Gravelly sandy loam*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from mixed rocks**Toulon Series***Elevation:* 3,800 to 4,500 feet*Precipitation:* About 5 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Surface rock fragments:* 45 percent gravel*Texture:* Very gravelly loam*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from mixed rocks**Rock outcrop Miscellaneous Area***Elevation:* 4,000 to 4,500 feet**Dominant Present Vegetation**

Bluewing: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Toulon: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Rock outcrop: None

Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 2: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, seepweed, shadscale

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

***Ecological Site***

Bluewing: 027XY050NV  
 Toulon: 027XY018NV  
 Rock outcrop: None  
 Inclusion 1: 027XY022NV  
 Inclusion 2: 027XY024NV  
 Inclusion 3: 027XY018NV

**186--Bluewing-Hawsley association*****Composition*****Major Components**

Bluewing gravelly sandy loam, 4 to 15 percent slopes--60 percent  
 Hawsley sand, 2 to 8 percent slopes--25 percent

**Contrasting Inclusions**

Inclusion 1: Aboten very gravelly sandy loam, 4 to 15 percent slopes--9 percent  
 Inclusion 2: Patna sand, 2 to 8 percent slopes--6 percent

***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Bluewing--Landform: Alluvial fans  
 Hawsley--Landform: Sand sheets  
 Inclusion 1--Landform: Fan remnants  
 Inclusion 2--Landform: Fan remnants; position on slope: lower

***Major Component Description*****Bluewing Series**

*Elevation:* 3,800 to 4,400 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Excessively drained  
*Dominant parent material:* Alluvium derived from mixed rocks

**Hawsley Series**

*Elevation:* 3,950 to 4,500 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

***Dominant Present Vegetation***

Bluewing: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Hawsley: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
 Inclusion 1: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat  
 Inclusion 2: Bailey greasewood, Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread

***Ecological Site***

Bluewing: 027XY050NV  
 Hawsley: 027XY009NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY009NV

**190--Theon-Old Camp association*****Composition*****Major Components**

Theon very gravelly sandy loam, 30 to 75 percent slopes--65 percent  
 Old Camp extremely stony loam, 30 to 50 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent  
 Inclusion 2: Singatse very cobbly sandy loam, 30 to 75 percent slopes--5 percent  
 Inclusion 3: Nemico very stony sandy loam, 8 to 30 percent slopes--4 percent

***Map Unit Setting***

*Landscape position:* Mountains  
 Theon--Landform: Mountains; geomorphic position: backslope; aspect: south  
 Old Camp--Landform: Mountains; geomorphic position: backslope; aspect: north  
 Inclusion 1--Landform: Mountains  
 Inclusion 2--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south  
 Inclusion 3--Landform: Mountains; geomorphic position: summit

***Major Component Description*****Theon Series**

*Elevation:* 5,300 to 6,500 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Old Camp Series**

*Elevation:* 5,300 to 6,500 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Extremely stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

***Dominant Present Vegetation***

Theon: Bailey greasewood, bud sagebrush, desert needlegrass, shadscale  
 Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 1: None  
 Inclusion 2: Bailey greasewood, Nevada dalea, bud sagebrush, shadscale  
 Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

#### ***Ecological Site***

Theon: 027XY019NV  
 Old Camp: 027XY007NV  
 Inclusion 1: none  
 Inclusion 2: 027XY027NV  
 Inclusion 3: 027XY015NV

### **191--Theon-Singatse-Rock outcrop association**

#### ***Composition***

##### **Major Components**

Theon stony sandy loam, 15 to 50 percent slopes--50 percent  
 Singatse very gravelly loam, 30 to 50 percent slopes--20 percent  
 Rock outcrop--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Old Camp very stony loam, 30 to 50 percent slopes--6 percent  
 Inclusion 2: Nemico very stony sandy loam, 4 to 15 percent slopes--4 percent  
 Inclusion 3: Isolde fine sand, 15 to 30 percent slopes--3 percent  
 Inclusion 4: Bluewing very gravelly loamy sand, 2 to 8 percent slopes--2 percent

#### ***Map Unit Setting***

**Landscape position:** Mountains and intermontane basins  
**Theon--Landform:** Mountains; geomorphic position: backslope; position on slope: upper  
**Singatse--Landform:** Mountains; geomorphic position: backslope; shape of slope: convex  
**Rock outcrop--Landform:** Mountains  
**Inclusion 1--Landform:** Mountains; geomorphic position: backslope; position on slope: upper; aspect: north  
**Inclusion 2--Landform:** Mountains; geomorphic position: summit  
**Inclusion 3--Landform:** Dunes  
**Inclusion 4--Landform:** Drainageways

#### ***Major Component Description***

##### **Theon Series**

**Elevation:** 4,600 to 5,900 feet  
**Precipitation:** About 7 inches  
**Air temperature:** About 50 degrees  
**Frost-free season:** About 110 days  
**Texture:** Stony sandy loam  
**Drainage class:** Well drained  
**Dominant parent material:** Residuum and colluvium derived from volcanic rocks

##### **Singatse Series**

**Elevation:** 4,600 to 5,900 feet  
**Precipitation:** About 6 inches  
**Air temperature:** About 51 degrees  
**Frost-free season:** About 110 days  
**Surface rock fragments:** 10 percent cobbles; 35 percent gravel  
**Texture:** Very gravelly loam  
**Drainage class:** Somewhat excessively drained  
**Dominant parent material:** Residuum and colluvium derived from volcanic rocks

##### **Rock outcrop Miscellaneous Area**

**Elevation:** 4,600 to 5,900 feet

#### ***Dominant Present Vegetation***

Theon: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, desert needlegrass, littleleaf horsebrush, shadscale  
 Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale  
 Rock outcrop: None  
 Inclusion 1: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale  
 Inclusion 3: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread  
 Inclusion 4: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Theon: 027XY019NV  
 Singatse: 027XY027NV  
 Rock outcrop: None  
 Inclusion 1: 027XY007NV  
 Inclusion 2: 027XY015NV  
 Inclusion 3: 027XY023NV  
 Inclusion 4: 027XY022NV

### **192--Theon very gravelly sandy loam, 8 to 30 percent slopes**

#### ***Composition***

##### **Major Components**

Theon very gravelly sandy loam, 8 to 30 percent slopes--85 percent

##### **Contrasting Inclusions**

Inclusion 1: Theon very gravelly sandy loam, 30 to 50 percent slopes--5 percent  
 Inclusion 2: Rock outcrop--5 percent  
 Inclusion 3: Hawsley sand, 4 to 15 percent slopes--3 percent  
 Inclusion 4: Isolde fine sand, 4 to 30 percent slopes--2 percent

#### ***Map Unit Setting***

**Landscape position:** Hills and intermontane basins

Theon--Landform: Hills  
 Inclusion 1--Landform: Hills  
 Inclusion 2--Landform: Hills  
 Inclusion 3--Landform: Sand sheets  
 Inclusion 4--Landform: Dunes

### **Major Component Description**

#### **Theon Series**

*Elevation:* 4,400 to 4,800 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### **Dominant Present Vegetation**

Theon: Bailey greasewood, bud sagebrush, desert needlegrass, shadscale  
 Inclusion 1: Bailey greasewood, bud sagebrush, desert needlegrass, littleleaf horsebrush, shadscale  
 Inclusion 2: None  
 Inclusion 3: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
 Inclusion 4: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

### **Ecological Site**

Theon: 027XY019NV  
 Inclusion 1: 027XY019NV  
 Inclusion 2: none  
 Inclusion 3: 027XY009NV  
 Inclusion 4: 027XY023NV

## **193--Theon-Mirkwood-Rock outcrop association**

### **Composition**

#### **Major Components**

Theon stony sandy loam, 30 to 50 percent slopes--40 percent  
 Mirkwood extremely stony loam, 30 to 50 percent slopes--25 percent  
 Rock outcrop--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Singatse very stony loam, 30 to 75 percent slopes--10 percent  
 Inclusion 2: Old Camp very stony loam, 30 to 50 percent slopes--4 percent  
 Inclusion 3: Bluewing very gravelly loamy sand, 2 to 8 percent slopes--1 percent

### **Map Unit Setting**

*Landscape position:* Mountains  
 Theon--Landform: Mountains; geomorphic position: backslope; aspect: north  
 Mirkwood--Landform: Mountains; geomorphic position: backslope; aspect: south  
 Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: convex  
 Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north  
 Inclusion 3--Landform: Drainageways

### **Major Component Description**

#### **Theon Series**

*Elevation:* 5,000 to 7,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Stony sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### **Mirkwood Series**

*Elevation:* 5,000 to 7,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Extremely stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### **Rock outcrop Miscellaneous Area**

*Elevation:* 5,000 to 7,000 feet

### **Dominant Present Vegetation**

Theon: Bailey greasewood, Indian ricegrass, desert needlegrass, littleleaf horsebrush, shadscale  
 Mirkwood: Anderson wolfberry, Indian ricegrass, desert needlegrass, littleleaf horsebrush, shadscale  
 Rock outcrop: None  
 Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale  
 Inclusion 2: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Inclusion 3: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

### **Ecological Site**

Theon: 027XY019NV  
 Mirkwood: 027XY017NV  
 Rock outcrop: None  
 Inclusion 1: 027XY027NV  
 Inclusion 2: 027XY007NV  
 Inclusion 3: 027XY022NV

## **194--Theon-Hooplite-Singatse association**

### **Composition**

#### **Major Components**

Theon very stony fine sandy loam, 15 to 50 percent slopes--35 percent

Hooplite very gravelly fine sandy loam, 15 to 50 percent slopes--30 percent  
 Singatse very stony sandy loam, 30 to 75 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Old Camp very gravelly sandy loam, 8 to 30 percent slopes--7 percent  
 Inclusion 2: Ricert very gravelly loam, 4 to 15 percent slopes--5 percent  
 Inclusion 3: Goldyke gravelly sandy loam, 8 to 30 percent slopes--3 percent

#### **Map Unit Setting**

*Landscape position:* Mountains and intermontane basins

Theon--Landform: Mountains; geomorphic position: backslope; aspect: south

Hooplite--Landform: Mountains; geomorphic position: summit; aspect: north

Singatse--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south

Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Inclusion 2--Landform: Fan remnants

Inclusion 3--Landform: Mountains; geomorphic position: backslope; aspect: south

#### **Major Component Description**

##### **Theon Series**

*Elevation:* 5,000 to 6,000 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Very stony fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Hooplite Series**

*Elevation:* 5,000 to 6,000 feet

*Precipitation:* About 8 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 110 days

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Singatse Series**

*Elevation:* 5,000 to 6,000 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 110 days

*Texture:* Very stony sandy loam

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Dominant Present Vegetation**

Theon: Bailey greasewood, Indian ricegrass,

bottlebrush squirreltail, desert needlegrass, littleleaf horsebrush, shadscale  
 Hooplite: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale  
 Singatse: Bailey greasewood, bud sagebrush, desert needlegrass, shadscale  
 Inclusion 1: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 3: Bailey greasewood, Indian ricegrass, Nevada ephedra, bud sagebrush, galleta, shadscale

#### **Ecological Site**

Theon: 027XY019NV

Hooplite: 027XY032NV

Singatse: 027XY027NV

Inclusion 1: 027XY007NV

Inclusion 2: 027XY018NV

Inclusion 3: 029XY022NV

### **199--Theon-Olac-Singatse association**

#### **Composition**

##### **Major Components**

Theon very stony fine sandy loam, 15 to 50 percent slopes--35 percent

Olac extremely stony loam, 15 to 50 percent slopes--30 percent

Singatse very cobbly loam, 30 to 50 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Cleaver gravelly loam, 2 to 4 percent slopes--8 percent

Inclusion 2: Rock outcrop--4 percent

Inclusion 3: Rubble land--3 percent

#### **Map Unit Setting**

*Landscape position:* Mountains and intermontane basins

Theon--Landform: Mountains; geomorphic position: backslope; aspect: south

Olac--Landform: Mountains; geomorphic position: backslope; aspect: north

Singatse--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south

Inclusion 1--Landform: Fan remnants

Inclusion 2--Landform: Mountains

Inclusion 3--Landform: Mountains; geomorphic position: backslope

#### **Major Component Description**

##### **Theon Series**

*Elevation:* 4,600 to 5,900 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees



*Frost-free season:* About 110 days  
*Texture:* Very stony fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Olac Series**

*Elevation:* 5,000 to 5,900 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Extremely stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Singatse Series**

*Elevation:* 5,000 to 5,900 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very cobbly loam  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Theon: Bailey greasewood, Indian ricegrass, desert needlegrass, littleleaf horsebrush, shadscale  
 Olac: Sandberg bluegrass, bottlebrush squirreltail, needlegrass  
 Singatse: Bailey greasewood, Indian ricegrass, Nevada ephedra, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: None  
 Inclusion 3: None

#### ***Ecological Site***

Theon: 027XY019NV  
 Olac: 027XY079NV  
 Singatse: 027XY027NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: none  
 Inclusion 3: none

### **200--Pirouette-Osobb-Rock outcrop association**

#### ***Composition***

##### **Major Components**

Pirouette very stony very fine sandy loam, 0 to 8 percent slopes--40 percent  
 Osobb extremely stony sandy loam, 8 to 30 percent slopes--40 percent  
 Rock outcrop--10 percent

##### **Contrasting Inclusions**

Inclusion 1: Osobb very stony sandy loam, 30 to 50 percent slopes--8 percent

Inclusion 2: Isolde fine sand, 4 to 30 percent slopes--2 percent

#### ***Map Unit Setting***

*Landscape position:* Hills and intermontane basins  
 Pirouette--Landform: Hills; geomorphic position: summit  
 Osobb--Landform: Hills; geomorphic position: backslope  
 Rock outcrop--Landform: Hills  
 Inclusion 1--Landform: Hills; geomorphic position: backslope  
 Inclusion 2--Landform: Dunes

#### ***Major Component Description***

##### **Pirouette Series**

*Elevation:* 4,300 to 5,400 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 10 percent stones and boulders; 15 percent cobbles; 10 percent gravel  
*Texture:* Very stony very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

##### **Osobb Series**

*Elevation:* 4,300 to 5,400 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 15 percent stones and boulders; 15 percent cobbles; 15 percent gravel  
*Texture:* Extremely stony sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Rock outcrop Miscellaneous Area**

*Elevation:* 4,300 to 5,400 feet

#### ***Dominant Present Vegetation***

Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Osobb: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale  
 Rock outcrop: None  
 Inclusion 1: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale  
 Inclusion 2: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

#### ***Ecological Site***

Pirouette: 027XY018NV  
 Osobb: 027XY027NV  
 Rock outcrop: None  
 Inclusion 1: 027XY027NV  
 Inclusion 2: 027XY023NV

**201--Pirouette-Osobb-Celeton association****Composition****Major Components**

Pirouette very stony very fine sandy loam, 2 to 15 percent slopes--35 percent

Osobb extremely stony fine sandy loam, 15 to 50 percent slopes--30 percent

Celeton very cobbly sandy loam, 8 to 30 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Typic Haplargids, loamy-skeletal, mixed, mesic, shallow, 4 to 15 percent slopes--6 percent

Inclusion 2: Rock outcrop--3 percent

Inclusion 3: Osobb sand, 15 to 50 percent slopes--3 percent

Inclusion 4: Isolde fine sand, 4 to 15 percent slopes--3 percent

**Map Unit Setting**

*Landscape position:* Plateaus and adjacent bolsons

Pirouette--Landform: Plateaus; geomorphic position: summit

Osobb--Landform: Plateaus; geomorphic position: backslope

Celeton--Landform: Plateaus; geomorphic position: backslope

Inclusion 1--Landform: Plateaus; geomorphic position: backslope

Inclusion 2--Landform: Plateaus

Inclusion 3--Landform: Plateaus; geomorphic position: backslope

Inclusion 4--Landform: Dunes

**Major Component Description****Pirouette Series**

*Elevation:* 4,500 to 5,600 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very stony very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

**Osobb Series**

*Elevation:* 4,500 to 5,600 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Extremely stony fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

**Celeton Series**

*Elevation:* 4,500 to 5,600 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 20 percent cobbles; 30 percent gravel

*Texture:* Very cobbly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from diatomite

**Dominant Present Vegetation**

Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Osobb: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale

Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat

Inclusion 1: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, galleta, shadscale

Inclusion 2: None

Inclusion 3: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale

Inclusion 4: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

**Ecological Site**

Pirouette: 027XY018NV

Osobb: 027XY027NV

Celeton: 027XY027NV

Inclusion 1: 027XY015NV

Inclusion 2: none

Inclusion 3: 027XY009NV

Inclusion 4: 027XY023NV

**203--Pirouette-Hawsley association****Composition****Major Components**

Pirouette very stony very fine sandy loam, 4 to 15 percent slopes--50 percent

Hawsley sand, 2 to 8 percent slopes--40 percent

**Contrasting Inclusions**

Inclusion 1: Theon stony sandy loam, 15 to 30 percent slopes--5 percent

Inclusion 2: Celeton very gravelly sandy loam, 30 to 50 percent slopes--3 percent

Inclusion 3: Rock outcrop--2 percent

**Map Unit Setting**

*Landscape position:* Plateaus and adjacent bolsons

Pirouette--Landform: Plateaus; geomorphic position: summit

Hawsley--Landform: Sand sheets

Inclusion 1--Landform: Plateaus; geomorphic position: backslope

Inclusion 2--Landform: Plateaus; position on slope: lower; shape of slope: convex

Inclusion 3--Landform: Plateaus; geomorphic position: backslope

**Major Component Description****Pirouette Series**

*Elevation:* 4,300 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days  
*Texture:* Very stony very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Hawsley Series**

*Elevation:* 4,300 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Water re-worked eolian sand

#### **Dominant Present Vegetation**

Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Hawsley: Fourwing saltbush, shadscale, winterfat  
 Inclusion 1: Indian ricegrass, shadscale, Bailey greasewood  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bluebunch wheatgrass, shadscale  
 Inclusion 3: None

#### **Ecological Site**

Pirouette: 027XY018NV  
 Hawsley: 027XY009NV  
 Hawsley: 027XY009NV  
 Inclusion 1: 027XY019NV  
 Inclusion 2: 027XY027NV  
 Inclusion 3: none

### **204--Pirouette-Osobb-Isolde association**

#### **Composition**

##### **Major Components**

Pirouette very stony very fine sandy loam, 4 to 15 percent slopes--35 percent  
 Osobb very stony very fine sandy loam, 15 to 50 percent slopes--30 percent  
 Isolde fine sand, 4 to 15 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent  
 Inclusion 2: Celeton very cobbly sandy loam, 30 to 50 percent slopes--5 percent  
 Inclusion 3: Xeric Torriorthents, sandy, mixed, mesic, 4 to 8 percent slopes--4 percent

#### **Map Unit Setting**

*Landscape position:* Plateaus and adjacent bolsons  
 Pirouette--Landform: Plateaus; geomorphic position: summit  
 Osobb--Landform: Plateaus; geomorphic position: backslope  
 Isolde--Landform: Dunes  
 Inclusion 1--Landform: Plateaus  
 Inclusion 2--Landform: Plateaus; geomorphic position: backslope  
 Inclusion 3--Landform: Inset fans

#### **Major Component Description**

##### **Pirouette Series**

*Elevation:* 4,100 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very stony very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Osobb Series**

*Elevation:* 4,100 to 5,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very stony very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

##### **Isolde Series**

*Elevation:* 4,100 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Fine sand  
*Drainage class:* Excessively drained  
*Dominant parent material:* Eolian sand

#### **Dominant Present Vegetation**

Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Osobb: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale  
 Isolde: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread  
 Inclusion 1: None  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat  
 Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

#### **Ecological Site**

Pirouette: 027XY018NV  
 Osobb: 027XY027NV  
 Isolde: 027XY023NV  
 Inclusion 1: none  
 Inclusion 2: 027XY027NV  
 Inclusion 3: 027XY045NV

### **206--Pirouette-Osobb-Old Camp association**

#### **Composition**

##### **Major Components**

Pirouette very stony very fine sandy loam, 8 to 30 percent slopes--40 percent  
 Osobb very stony very fine sandy loam, 30 to 50 percent slopes--30 percent

Old Camp stony sandy loam, 30 to 50 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent

Inclusion 2: Loomer cobbly loam, 30 to 50 percent slopes--5 percent

Inclusion 3: Xeric Torriorthents, sandy, mixed, mesic, 4 to 8 percent slopes--4 percent

**Map Unit Setting**

*Landscape position:* Hills and intermontane basins

Pirouette--Landform: Hills; geomorphic position: summit

Osobb--Landform: Hills; geomorphic position: backslope; aspect: south

Old Camp--Landform: Hills; geomorphic position: backslope; aspect: north

Inclusion 1--Landform: Hills

Inclusion 2--Landform: Hills; geomorphic position: backslope; position on slope: lower; shape of slope: convex; aspect: north

Inclusion 3--Landform: Alluvial fans

**Major Component Description**

**Pirouette Series**

*Elevation:* 4,600 to 5,700 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very stony very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Osobb Series**

*Elevation:* 4,600 to 5,700 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Very stony very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

**Old Camp Series**

*Elevation:* 4,600 to 5,700 feet

*Precipitation:* About 8 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 100 days

*Texture:* Stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

**Dominant Present Vegetation**

Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Osobb: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush,

spiny hopsage

Inclusion 1: None

Inclusion 2: Sandberg bluegrass, Thurber needlegrass, spiny hopsage

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

**Ecological Site**

Pirouette: 027XY018NV

Osobb: 027XY027NV

Old Camp: 027XY007NV

Inclusion 1: none

Inclusion 2: 027XY070NV

Inclusion 3: 027XY029NV

**207--Pirouette-Rezave-Osobb association**

**Composition**

**Major Components**

Pirouette very stony very fine sandy loam, 8 to 15 percent slopes--35 percent

Rezave very stony fine sandy loam, 15 to 30 percent slopes--30 percent

Osobb very stony very fine sandy loam, 30 to 50 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Nemico very stony loam, 2 to 8 percent slopes--5 percent

Inclusion 2: Celeton very gravelly sandy loam, 15 to 50 percent slopes--5 percent

Inclusion 3: Xeric Torripsammets, mixed, mesic sand, 8 to 30 percent slopes--5 percent

**Map Unit Setting**

*Landscape position:* Hills and intermontane basins

Pirouette--Landform: Hills; geomorphic position: summit

Rezave--Landform: Hills; geomorphic position: shoulder

Osobb--Landform: Hills; geomorphic position: backslope

Inclusion 1--Landform: Hills; geomorphic position: summit; shape of slope: concave

Inclusion 2--Landform: Hills; geomorphic position: backslope

Inclusion 3--Landform: Dunes

**Major Component Description**

**Pirouette Series**

*Elevation:* 5,000 to 6,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very stony very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Rezave Series***Elevation:* 5,000 to 6,300 feet*Precipitation:* About 7 inches*Air temperature:* About 51 degrees*Frost-free season:* About 110 days*Texture:* Very stony fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Osobb Series***Elevation:* 5,000 to 6,300 feet*Precipitation:* About 7 inches*Air temperature:* About 50 degrees*Frost-free season:* About 120 days*Texture:* Very stony very fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks***Dominant Present Vegetation***

Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Rezave: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Osobb: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat

Inclusion 3: Indian ricegrass, Nevada ephedra, fourwing saltbush, needleandthread

***Ecological Site***

Pirouette: 027XY018NV

Rezave: 027XY018NV

Osobb: 027XY027NV

Inclusion 1: 027XY015NV

Inclusion 2: 027XY027NV

Inclusion 3: 027XY053NV

**208--Pirouette-Theon-Rubble land association*****Composition*****Major Components**

Pirouette very stony very fine sandy loam, 4 to 15 percent slopes--40 percent

Theon stony sandy loam, 15 to 50 percent slopes--30 percent

Rubble land--15 percent

**Contrasting Inclusions**

Inclusion 1: Trocken very gravelly loam, 15 to 30 percent slopes--8 percent

Inclusion 2: Osobb very stony loamy sand, 15 to 50

percent slopes--5 percent

Inclusion 3: Rock outcrop--2 percent

***Map Unit Setting****Landscape position:* Hills and intermontane basins

Pirouette--Landform: Hills; geomorphic position: summit

Theon--Landform: Hills; geomorphic position: backslope

Rubble land--Landform: Hills; geomorphic position: backslope

Inclusion 1--Landform: Beach terraces

Inclusion 2--Landform: Hills; geomorphic position: backslope; position on slope: lower

Inclusion 3--Landform: Hills

***Major Component Description*****Pirouette Series***Elevation:* 4,600 to 5,900 feet*Precipitation:* About 6 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Very stony very fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from volcanic rocks**Theon Series***Elevation:* 4,600 to 5,900 feet*Precipitation:* About 7 inches*Air temperature:* About 50 degrees*Frost-free season:* About 120 days*Texture:* Stony sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Rubble land Miscellaneous Area***Elevation:* 4,600 to 5,900 feet*Drainage class:* Excessively drained***Dominant Present Vegetation***

Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Theon: Bailey greasewood, Indian ricegrass, desert needlegrass, littleleaf horsebrush, shadscale

Rubble land: None

Inclusion 1: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

Inclusion 2: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale

Inclusion 3: None

***Ecological Site***

Pirouette: 027XY018NV

Theon: 027XY019NV

Rubble land: None

Inclusion 1: 027XY013NV

Inclusion 2: 027XY027NV

Inclusion 3: none

**210--Biddleman association*****Composition*****Major Components**

Biddleman gravelly sandy loam, 0 to 8 percent slopes--65 percent

Biddleman very stony sandy loam, 4 to 15 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Stumble sand, 0 to 8 percent slopes--10 percent

Inclusion 2: Badland--5 percent

***Map Unit Setting***

*Landscape position:* Intermontane basins

Biddleman--Landform: Beach terraces

Biddleman--Landform: Beach terraces; position on slope: upper

Inclusion 1--Landform: Sand sheets

Inclusion 2--Landform: Scarp slopes

***Major Component Description*****Biddleman Series**

*Elevation:* 4,200 to 4,400 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 5 percent cobbles; 25 percent gravel

*Texture:* Gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Biddleman Series**

*Elevation:* 4,200 to 4,400 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 5 percent stones and boulders; 10 percent cobbles; 25 percent gravel

*Texture:* Very stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

***Dominant Present Vegetation***

Biddleman: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Biddleman: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, fourwing saltbush, needleandthread

Inclusion 2: None

***Ecological Site***

Biddleman: 027XY018NV

Biddleman: 027XY018NV

Inclusion 1: 027XY009NV

Inclusion 2: none

**211--Biddleman, eroded-Trocken-Biddleman association*****Composition*****Major Components**

Biddleman gravelly sandy loam, 2 to 4 percent slopes--35 percent

Trocken gravelly fine sandy loam, 2 to 8 percent slopes--35 percent

Biddleman very stony sandy loam, 2 to 8 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Bluewing very cobbly loamy sand, 2 to 8 percent slopes--10 percent

Inclusion 2: Rock outcrop--5 percent

***Map Unit Setting***

*Landscape position:* Intermontane basins

Biddleman--Landform: Beach terraces

Trocken--Landform: Beach terraces; position on slope: lower

Biddleman--Landform: Beach terraces; position on slope: upper

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Beach terraces

***Major Component Description*****Biddleman Series**

*Elevation:* 4,000 to 4,300 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Trocken Series**

*Elevation:* 4,000 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Biddleman Series**

*Elevation:* 4,000 to 4,300 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

***Dominant Present Vegetation***

Biddleman: Bailey greasewood, bud sagebrush,

shadscale

Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Biddleman: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 2: None

#### ***Ecological Site***

Biddleman: 027XY076NV

Trocken: 027XY050NV

Biddleman: 027XY018NV

Inclusion 1: 027XY022NV

Inclusion 2: none

#### ***Dominant Present Vegetation***

Biddleman: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, galleta, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, needleandthread, shadscale

#### ***Ecological Site***

Biddleman: 027XY018NV

Trocken: 027XY050NV

Inclusion 1: 027XY024NV

Inclusion 2: 027XY009NV

### **213--Biddleman-Trocken association**

#### ***Composition***

##### **Major Components**

Biddleman very stony sandy loam, 4 to 15 percent slopes--45 percent

Trocken very gravelly sandy loam, 2 to 8 percent slopes--40 percent

##### **Contrasting Inclusions**

Inclusion 1: Otomo gravelly sandy loam, 4 to 15 percent slopes--9 percent

Inclusion 2: Ruhe fine sand, 2 to 8 percent slopes--6 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Biddleman--Landform: Beach terraces; position on slope: upper

Trocken--Landform: Beach terraces; position on slope: lower

Inclusion 1--Landform: Fan remnants

Inclusion 2--Landform: Beach terraces

#### ***Major Component Description***

##### **Biddleman Series**

*Elevation:* 4,000 to 4,300 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

##### **Trocken Series**

*Elevation:* 4,000 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

### **214--Biddleman-Trocken-Ruhe association**

#### ***Composition***

##### **Major Components**

Biddleman gravelly sandy loam, 2 to 8 percent slopes--45 percent

Trocken very gravelly sandy loam, 2 to 8 percent slopes--25 percent

Ruhe gravelly loamy sand, 2 to 4 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Biddleman extremely stony sandy loam, 4 to 15 percent slopes--9 percent

Inclusion 2: Bango sandy loam, 2 to 4 percent slopes--6 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Biddleman--Landform: Beach terraces

Trocken--Landform: Beach terraces; position on slope: lower

Ruhe--Landform: Beach terraces

Inclusion 1--Landform: Beach terraces; position on slope: upper

Inclusion 2--Landform: Lake terraces

#### ***Major Component Description***

##### **Biddleman Series**

*Elevation:* 4,000 to 4,300 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

##### **Trocken Series**

*Elevation:* 4,000 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Ruhe Series**

*Elevation:* 4,000 to 4,300 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly loamy sand  
*Drainage class:* Well drained  
*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

#### **Dominant Present Vegetation**

Biddleman: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Ruhe: Bailey greasewood, Indian ricegrass, bud sagebrush, dalea, needleandthread, shadscale  
 Inclusion 1: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### **Ecological Site**

Biddleman: 027XY018NV  
 Trocken: 027XY050NV  
 Ruhe: 027XY009NV  
 Inclusion 1: 027XY024NV  
 Inclusion 2: 027XY024NV

### **215--Biddleman-Isolde association**

#### **Composition**

##### **Major Components**

Biddleman very stony sandy loam, 0 to 4 percent slopes--60 percent  
 Isolde fine sand, 4 to 15 percent slopes--25 percent

##### **Contrasting Inclusions**

Inclusion 1: Trocken very gravelly loam, 15 to 30 percent slopes--9 percent  
 Inclusion 2: Bango sandy loam, 2 to 4 percent slopes--6 percent

#### **Map Unit Setting**

*Landscape position:* Intermontane basins  
 Biddleman--Landform: Beach terraces  
 Isolde--Landform: Dunes  
 Inclusion 1--Landform: Beach terraces; position on slope: lower  
 Inclusion 2--Landform: Lake terraces

#### **Major Component Description**

##### **Biddleman Series**

*Elevation:* 4,000 to 4,300 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very stony sandy loam

*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

#### **Isolde Series**

*Elevation:* 3,900 to 4,400 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Fine sand  
*Drainage class:* Excessively drained  
*Dominant parent material:* Eolian sand

#### **Dominant Present Vegetation**

Biddleman: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Isolde: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread  
 Inclusion 1: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### **Ecological Site**

Biddleman: 027XY018NV  
 Isolde: 027XY023NV  
 Inclusion 1: 027XY013NV  
 Inclusion 2: 027XY018NV

### **216--Biddleman-Bluewing-Trocken association**

#### **Composition**

##### **Major Components**

Biddleman gravelly sandy loam, 2 to 4 percent slopes--45 percent  
 Bluewing gravelly sandy loam, 2 to 4 percent slopes--25 percent  
 Trocken gravelly sandy loam, 2 to 4 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Toulon very gravelly loam, 0 to 4 percent slopes--9 percent  
 Inclusion 2: Mazuma sandy loam, 0 to 4 percent slopes--6 percent

#### **Map Unit Setting**

*Landscape position:* Intermontane basins  
 Biddleman--Landform: Beach terraces  
 Bluewing--Landform: Inset fans  
 Trocken--Landform: Inset fans; position on slope: upper  
 Inclusion 1--Landform: Longshore bars (relict); position on slope: upper  
 Inclusion 2--Landform: Lagoons

#### **Major Component Description**

##### **Biddleman Series**

*Elevation:* 4,200 to 4,400 feet  
*Precipitation:* About 4 inches  
*Air temperature:* About 51 degrees



*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

#### **Bluewing Series**

*Elevation:* 3,900 to 4,100 feet  
*Precipitation:* About 4 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Excessively drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Trocken Series**

*Elevation:* 5,200 to 6,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Biddleman: Bailey greasewood, Cooper wolfberry, Indian ricegrass, shadscale  
 Bluewing: Bailey greasewood, Cooper wolfberry, Indian ricegrass, shadscale  
 Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### ***Ecological Site***

Biddleman: 027XY043NV  
 Bluewing: 027XY043NV  
 Trocken: 027XY050NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY018NV

### **220--Bango-Stumble association**

#### ***Composition***

##### **Major Components**

Bango sandy loam, 2 to 4 percent slopes--45 percent  
 Stumble loamy sand, 0 to 4 percent slopes--40 percent

##### **Contrasting Inclusions**

Inclusion 1: Biddleman extremely stony sandy loam, 4 to 15 percent slopes--8 percent  
 Inclusion 2: Badland--4 percent  
 Inclusion 3: Lithic Torriorthents, loamy, mixed (calcareous), mesic, 8 to 30 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Hills and intermontane basins  
 Bango--Landform: Lake terraces  
 Stumble--Landform: Sand sheets  
 Inclusion 1--Landform: Beach terraces  
 Inclusion 2--Landform: Scarp slopes  
 Inclusion 3--Landform: Hills

#### ***Major Component Description***

##### **Bango Series**

*Elevation:* 3,900 to 4,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

##### **Stumble Series**

*Elevation:* 3,900 to 4,400 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 130 days  
*Texture:* Loamy sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Bango: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Stumble: Bailey greasewood, Indian ricegrass, fourwing saltbush, needleandthread  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: None  
 Inclusion 3: Indian ricegrass, shadscale

#### ***Ecological Site***

Bango: 027XY018NV  
 Stumble: 027XY009NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: none  
 Inclusion 3: 027XY027NV

### **221--Bango-Appian association**

#### ***Composition***

##### **Major Components**

Bango very gravelly loamy sand, 2 to 8 percent slopes--50 percent  
 Appian loam, 0 to 2 percent slopes--35 percent

##### **Contrasting Inclusions**

Inclusion 1: Biddleman very gravelly sandy loam, 4 to 15 percent slopes--8 percent  
 Inclusion 2: Trocken very gravelly sandy loam, 2 to 8 percent slopes--5 percent  
 Inclusion 3: Singatse very gravelly sandy loam, 4 to 15 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Hills and intermontane basins  
 Bango--Landform: Lake terraces; position on slope: upper  
 Appian--Landform: Lake plains; position on slope: lower  
 Inclusion 1--Landform: Spits  
 Inclusion 2--Landform: Inset fans  
 Inclusion 3--Landform: Hills

**Major Component Description****Bango Series**

*Elevation:* 3,900 to 4,100 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly loamy sand  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Appian Series**

*Elevation:* 3,900 to 4,100 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Dominant Present Vegetation**

Bango: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Appian: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale  
 Inclusion 3: Bailey greasewood, Indian ricegrass, burrobrush, shadscale

**Ecological Site**

Bango: 027XY018NV  
 Appian: 027XY018NV  
 Inclusion 1: 027XY076NV  
 Inclusion 2: 027XY018NV  
 Inclusion 3: 027XY027NV

**222--Bango-Playas-Chuckles association****Composition****Major Components**

Bango sandy loam, 2 to 4 percent slopes--45 percent  
 Playas silty clay loam, 0 to 1 percent slopes--25 percent  
 Chuckles loam, 0 to 2 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Slaw silt loam, 0 to 2 percent slopes--6 percent  
 Inclusion 2: Isolde fine sand, 4 to 8 percent slopes--6 percent  
 Inclusion 3: Louderback sand, 0 to 2 percent slopes--3 percent

**Map Unit Setting**

*Landscape position:* Intermontane basins  
 Bango--Landform: Lake plains; position on slope: upper  
 Playas--Landform: Playas  
 Chuckles--Landform: Lake plains; position on slope: lower  
 Inclusion 1--Landform: Drainageways  
 Inclusion 2--Landform: Dunes  
 Inclusion 3--Landform: Lake plains; position on slope: lower; shape of slope: concave

**Major Component Description****Bango Series**

*Elevation:* 3,800 to 4,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Playas Miscellaneous Area**

*Elevation:* 3,800 to 4,000 feet  
*Texture:* Silty clay loam

**Chuckles Series**

*Elevation:* 3,800 to 4,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Loam  
*Drainage class:* Moderately well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Dominant Present Vegetation**

Bango: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Playas: None  
 Chuckles: Bluegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale  
 Inclusion 2: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
 Inclusion 3: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed

**Ecological Site**

Bango: 027XY018NV  
 Chuckles: 027XY024NV  
 Playas: None

Inclusion 1: 027XY041NV  
 Inclusion 2: 027XY016NV  
 Inclusion 3: 027XY005NV

### **230--Uripnes-Budihol-Rock outcrop association**

#### ***Composition***

##### **Major Components**

Uripnes very stony sandy loam, 30 to 50 percent slopes--45 percent  
 Budihol stony sandy loam, 30 to 50 percent slopes--30 percent

Rock outcrop--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Typic Haplargids, loamy-skeletal, mixed, mesic, shallow, 30 to 50 percent slopes--7 percent  
 Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 30 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Mountains

Uripnes--Landform: Mountains; geomorphic position: backslope; aspect: south

Budihol--Landform: Mountains; geomorphic position: backslope; aspect: north

Rock outcrop--Landform: Mountains; shape of slope: plane

Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Inclusion 2--Landform: Drainageways

#### ***Major Component Description***

##### **Uripnes Series**

*Elevation:* 4,500 to 5,800 feet

*Precipitation:* About 8 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 5 percent stones and boulders; 10 percent cobbles; 30 percent gravel

*Texture:* Very stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from granitic rocks

##### **Budihol Series**

*Elevation:* 4,500 to 5,800 feet

*Precipitation:* About 9 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 100 days

*Surface rock fragments:* 2 percent stones and boulders; 5 percent cobbles; 25 percent gravel

*Texture:* Stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from granitic rocks

##### **Rock outcrop Miscellaneous Area**

*Elevation:* 4,500 to 5,800 feet

#### ***Dominant Present Vegetation***

Uripnes: Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale, spiny hopsage  
 Budihol: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Rock outcrop: None

Inclusion 1: Anderson wolfberry, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale, spiny hopsage

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Uripnes: 027XY047NV

Budihol: 027XY007NV

Rock outcrop: None

Inclusion 1: 027XY017NV

Inclusion 2: 027XY029NV

### **231--Uripnes-Budihol-Chill association**

#### ***Composition***

##### **Major Components**

Uripnes very gravelly sandy loam, 30 to 50 percent slopes--35 percent

Budihol very gravelly sandy loam, 30 to 50 percent slopes--30 percent

Chill gravelly sandy loam, 15 to 30 percent slopes--25 percent

##### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--7 percent

Inclusion 2: Aridic Argixerolls, loamy-skeletal, mixed, mesic, shallow, 30 to 50 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Mountains

Uripnes--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: south

Budihol--Landform: Mountains; geomorphic position: backslope; aspect: north

Chill--Landform: Mountains; geomorphic position: summit; position on slope: upper; aspect: south

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: convex; aspect: north

#### ***Major Component Description***

##### **Uripnes Series**

*Elevation:* 4,100 to 6,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from granitic rocks

**Budiol Series***Elevation:* 4,100 to 6,000 feet*Precipitation:* About 9 inches*Air temperature:* About 50 degrees*Frost-free season:* About 100 days*Texture:* Very gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from granitic rocks**Chill Series***Elevation:* 4,100 to 6,000 feet*Precipitation:* About 8 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from granitic rocks***Dominant Present Vegetation***

Uripnes: Bailey greasewood, Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale

Budiol: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Chill: Indian ricegrass, Wyoming big sagebrush, needlegrass, pine bluegrass, spiny hopsage

Inclusion 1: None

Inclusion 2: Idaho fescue, low sagebrush

***Ecological Site***

Uripnes: 027XY017NV

Budiol: 027XY007NV

Chill: 027XY008NV

Inclusion 1: none

Inclusion 2: 027XY046NV

**232--Uripnes-Rock outcrop association*****Composition*****Major Components**

Uripnes very stony sandy loam, 15 to 50 percent slopes--65 percent

Rock outcrop--20 percent

**Contrasting Inclusions**

Inclusion 1: Jobpeak very gravelly loam, 50 to 75 percent slopes--7 percent

Inclusion 2: Budiol very stony loam, 8 to 30 percent slopes--6 percent

Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 4 to 15 percent slopes--2 percent

***Map Unit Setting****Landscape position:* Mountains

Uripnes--Landform: Mountains; geomorphic position: backslope; aspect: south

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

Inclusion 2--Landform: Mountains; geomorphic position: backslope; aspect: north

Inclusion 3--Landform: Drainageways

***Major Component Description*****Uripnes Series***Elevation:* 4,900 to 6,000 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Very stony sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from granitic rocks**Rock outcrop Miscellaneous Area***Elevation:* 4,900 to 6,000 feet***Dominant Present Vegetation***

Uripnes: Bailey greasewood, Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale

Rock outcrop: None

Inclusion 1: Douglas rabbitbrush, Sandberg bluegrass, Utah juniper, Wyoming big sagebrush

Inclusion 2: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

***Ecological Site***

Uripnes: 027XY017NV

Rock outcrop: None

Inclusion 1: 027XY082NV

Inclusion 2: 027XY007NV

Inclusion 3: 027XY029NV

**240--Watoopah-Genegraf-Buckaroo association*****Composition*****Major Components**

Watoopah gravelly loamy sand, 2 to 8 percent slopes--40 percent

Genegraf gravelly sandy loam, 2 to 8 percent slopes--40 percent

Buckaroo stony fine sandy loam, 4 to 15 percent slopes--10 percent

**Contrasting Inclusions**

Inclusion 1: Xeric Torripsamments, mixed, mesic, 2 to 8 percent slopes--7 percent

Inclusion 2: Xeric Torripsamments, mixed, mesic, 15 to 30 percent slopes--3 percent

**Map Unit Setting**

*Landscape position:* Fan piedmonts  
*Watoopah--Landform:* Fan remnants  
*Genegraf--Landform:* Fan remnants; position on slope: lower  
*Buckaroo--Landform:* Fan remnants; position on slope: upper  
*Inclusion 1--Landform:* Sand sheets  
*Inclusion 2--Landform:* Dunes

**Major Component Description****Watoopah Series**

*Elevation:* 5,200 to 5,600 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly loamy sand  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

**Genegraf Series**

*Elevation:* 5,200 to 5,600 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

**Buckaroo Series**

*Elevation:* 5,200 to 5,600 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Stony fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

**Dominant Present Vegetation**

Watoopah: Indian ricegrass, Wyoming big sagebrush, needleandthread, western wheatgrass  
 Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage  
 Buckaroo: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, western wheatgrass  
 Inclusion 2: Indian ricegrass, Nevada ephedra, fourwing saltbush, needleandthread

**Ecological Site**

Watoopah: 027XY045NV  
 Genegraf: 027XY018NV  
 Buckaroo: 027XY018NV  
 Inclusion 1: 027XY045NV  
 Inclusion 2: 027XY053NV

**241--Watoopah-Buckaroo-Wholan association****Composition****Major Components**

Watoopah sand, 2 to 8 percent slopes--45 percent  
 Buckaroo very gravelly very fine sandy loam, 2 to 8 percent slopes--20 percent  
 Wholan very fine sandy loam, 2 to 4 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Xeric Torripsamments, mixed, mesic, 4 to 15 percent slopes--6 percent  
 Inclusion 2: Xerollic Camborthids, sandy, mixed, mesic, 2 to 8 percent slopes--4 percent  
 Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 2 to 8 percent slopes--3 percent  
 Inclusion 4: Buckaroo very gravelly fine sandy loam, 4 to 8 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Fan piedmonts  
*Watoopah--Landform:* Fan remnants; position on slope: upper  
*Buckaroo--Landform:* Fan remnants; position on slope: lower  
*Wholan--Landform:* Inset fans  
*Inclusion 1--Landform:* Dunes  
*Inclusion 2--Landform:* Inset fans; position on slope: upper  
*Inclusion 3--Landform:* Drainageways  
*Inclusion 4--Landform:* Fan remnants

**Major Component Description****Watoopah Series**

*Elevation:* 4,900 to 5,600 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Sand  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

**Buckaroo Series**

*Elevation:* 4,900 to 5,600 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

**Wholan Series**

*Elevation:* 4,900 to 5,600 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days

*Texture:* Very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

### ***Dominant Present Vegetation***

- Watoopah: Indian ricegrass, Wyoming big sagebrush, needleandthread, western wheatgrass  
 Buckaroo: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Wholan: Indian ricegrass, bud sagebrush, fourwing saltbush, winterfat  
 Inclusion 1: Indian ricegrass, Nevada ephedra, fourwing saltbush, needleandthread  
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, western wheatgrass  
 Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 4: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, winterfat

### ***Ecological Site***

- Watoopah: 027XY045NV  
 Buckaroo: 027XY018NV  
 Wholan: 027XY014NV  
 Inclusion 1: 027XY053NV  
 Inclusion 2: 027XY045NV  
 Inclusion 3: 027XY029NV  
 Inclusion 4: 027XY013NV

## **250--Rezave-Singatse-Rock outcrop association**

### ***Composition***

#### **Major Components**

- Rezave very gravelly clay loam, 4 to 15 percent slopes--45 percent  
 Singatse very gravelly loam, 8 to 30 percent slopes--30 percent  
 Rock outcrop--10 percent  
**Contrasting Inclusions**  
 Inclusion 1: Theon very cobbly loam, 15 to 30 percent slopes--5 percent  
 Inclusion 2: Patna loamy sand, 2 to 4 percent slopes--4 percent  
 Inclusion 3: Singatse very gravelly loam, 30 to 50 percent slopes--3 percent  
 Inclusion 4: Typic Torripsamments, mixed, mesic, 2 to 8 percent slopes--3 percent

### ***Map Unit Setting***

- Landscape position:* Hills and intermontane basins  
 Rezave--Landform: Hills; geomorphic position: summit  
 Singatse--Landform: Hills; geomorphic position: backslope  
 Rock outcrop--Landform: Hills  
 Inclusion 1--Landform: Hills  
 Inclusion 2--Landform: Hills; geomorphic position: toeslope; position on slope: lower

Inclusion 3--Landform: Hills

Inclusion 4--Landform: Dunes

### ***Major Component Description***

#### **Rezave Series**

- Elevation:* 4,400 to 5,500 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly clay loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Singatse Series**

- Elevation:* 4,400 to 5,500 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly loam  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### **Rock outcrop Miscellaneous Area**

*Elevation:* 4,400 to 5,500 feet

### ***Dominant Present Vegetation***

- Rezave: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale  
 Rock outcrop: None  
 Inclusion 1: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, fourwing saltbush, needleandthread  
 Inclusion 3: Bailey greasewood, Indian ricegrass, burrobrush, shadscale  
 Inclusion 4: Indian ricegrass, black greasewood, fourwing saltbush, shadscale

### ***Ecological Site***

- Rezave: 027XY018NV  
 Singatse: 027XY027NV  
 Rock outcrop: None  
 Inclusion 1: 027XY016NV  
 Inclusion 2: 027XY009NV  
 Inclusion 3: 027XY027NV  
 Inclusion 4: 027XY018NV

## **260--Appian-Playas association**

### ***Composition***

#### **Major Components**

- Appian sandy loam, 0 to 2 percent slopes--45 percent  
 Playas silty clay loam, 0 to 1 percent slopes--45 percent

**Contrasting Inclusions**

Inclusion 1: Isolde fine sand, 2 to 8 percent slopes--5 percent  
 Inclusion 2: Bango gravelly sandy loam, 0 to 2 percent slopes--5 percent

**Map Unit Setting**

*Landscape position:* Bolsons  
 Appian--Landform: Lake terraces  
 Playas--Landform: Playas  
 Inclusion 1--Landform: Dunes  
 Inclusion 2--Landform: Lake terraces; shape of slope: concave

**Major Component Description****Appian Series**

*Elevation:* 3,900 to 4,200 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Playas Miscellaneous Area**

*Elevation:* 3,900 to 4,200 feet  
*Texture:* Silty clay loam

**Dominant Present Vegetation**

Appian: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Playas: None  
 Inclusion 1: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

**Ecological Site**

Appian: 027XY018NV  
 Playas: None  
 Inclusion 1: 027XY016NV  
 Inclusion 2: 027XY018NV

**261--Appian loamy sand, 0 to 2 percent slopes****Composition****Major Components**

Appian loamy sand, 0 to 2 percent slopes--85 percent

**Contrasting Inclusions**

Inclusion 1: Isolde fine sand, 2 to 15 percent slopes--7 percent  
 Inclusion 2: Hawsley sand, 2 to 8 percent slopes--5 percent  
 Inclusion 3: Playas--3 percent

**Map Unit Setting**

*Landscape position:* Bolsons  
 Appian--Landform: Lake terraces  
 Inclusion 1--Landform: Dunes  
 Inclusion 2--Landform: Sand sheets  
 Inclusion 3--Landform: Playas

**Major Component Description****Appian Series**

*Elevation:* 3,900 to 4,200 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Loamy sand  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Dominant Present Vegetation**

Appian: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread  
 Inclusion 2: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
 Inclusion 3: None

**Ecological Site**

Appian: 027XY018NV  
 Inclusion 1: 027XY023NV  
 Inclusion 2: 027XY009NV  
 Inclusion 3: none

**262--Appian-Juva-Bango association****Composition****Major Components**

Appian sandy loam, 0 to 2 percent slopes--35 percent  
 Juva loam, 0 to 2 percent slopes--35 percent  
 Bango gravelly sandy loam, 0 to 2 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Typic Torriorthents, fine-loamy, mixed (calcareous), mesic, 0 to 2 percent slopes--8 percent  
 Inclusion 2: Hawsley sand, 0 to 4 percent slopes--3 percent  
 Inclusion 3: Bluewing very gravelly loamy sand, 0 to 4 percent slopes--2 percent  
 Inclusion 4: Playas--2 percent

**Map Unit Setting**

*Landscape position:* Bolsons  
 Appian--Landform: Lake terraces  
 Juva--Landform: Drainageways  
 Bango--Landform: Lake terraces; position on slope: lower

Inclusion 1--Landform: Lake terraces  
 Inclusion 2--Landform: Sand sheets  
 Inclusion 3--Landform: Drainageways  
 Inclusion 4--Landform: Playas

### ***Major Component Description***

#### **Appian Series**

*Elevation:* 4,100 to 4,300 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

#### **Juva Series**

*Elevation:* 4,100 to 4,300 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Bango Series**

*Elevation:* 4,100 to 4,300 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

### ***Dominant Present Vegetation***

Appian: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Juva: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Bango: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat  
 Inclusion 2: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
 Inclusion 3: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 4: None

### ***Ecological Site***

Appian: 027XY018NV  
 Juva: 027XY018NV  
 Bango: 027XY018NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY009NV  
 Inclusion 3: 027XY022NV  
 Inclusion 4: none

## **270--Fubble-Nicanor association**

### ***Composition***

#### **Major Components**

Fubble very stony loam, 8 to 50 percent slopes--60 percent  
 Nicanor stony loam, 30 to 50 percent slopes--25 percent

#### **Contrasting Inclusions**

Inclusion 1: Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic, 30 to 50 percent slopes--8 percent  
 Inclusion 2: Rock outcrop--5 percent  
 Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic, 4 to 15 percent slopes--2 percent

### ***Map Unit Setting***

*Landscape position:* Mountains  
 Fubble--Landform: Mountains; geomorphic position: backslope; aspect: north  
 Nicanor--Landform: Mountains; geomorphic position: backslope; aspect: south  
 Inclusion 1--Landform: Mountains; geomorphic position: backslope  
 Inclusion 2--Landform: Mountains  
 Inclusion 3--Landform: Drainageways

### ***Major Component Description***

#### **Fubble Series**

*Elevation:* 5,500 to 7,100 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Surface rock fragments:* 3 percent stones and boulders; 10 percent cobbles  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from metamorphic rocks

#### **Nicanor Series**

*Elevation:* 5,500 to 7,100 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 100 days  
*Surface rock fragments:* 1 percent stones and boulders; 5 percent cobbles; 20 percent gravel  
*Texture:* Stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from metamorphic rocks

### ***Dominant Present Vegetation***

Fubble: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Nicanor: Indian ricegrass, Nevada ephedra, Wyoming big sagebrush, black sagebrush, desert needlegrass



Inclusion 1: Sandberg bluegrass, black sagebrush, pine bluegrass, shadscale  
 Inclusion 2: None  
 Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Fubble: 027XY007NV  
 Nicanor: 027XY051NV  
 Inclusion 1: 027XY032NV  
 Inclusion 2: none  
 Inclusion 3: 027XY029NV

### **280--Trocken-Chuckles association**

#### ***Composition***

##### **Major Components**

Trocken very fine sandy loam, 0 to 2 percent slopes--60 percent  
 Chuckles loam, 0 to 2 percent slopes--30 percent

##### **Contrasting Inclusions**

Inclusion 1: Trocken gravelly fine sandy loam, 0 to 4 percent slopes--4 percent  
 Inclusion 2: Playas--3 percent  
 Inclusion 3: Bluewing very gravelly loamy sand, 0 to 2 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Bolsons  
 Trocken--Landform: Lake terraces  
 Chuckles--Landform: Lake terraces; position on slope: lower  
 Inclusion 1--Landform: Lake terraces; position on slope: upper  
 Inclusion 2--Landform: Playas  
 Inclusion 3--Landform: Drainageways

#### ***Major Component Description***

##### **Trocken Series**

*Elevation:* 3,800 to 4,300 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

##### **Chuckles Series**

*Elevation:* 3,800 to 4,300 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Loam  
*Drainage class:* Moderately well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

#### ***Dominant Present Vegetation***

Trocken: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, shadscale  
 Chuckles: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 2: None  
 Inclusion 3: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Trocken: 027XY024NV  
 Chuckles: 027XY024NV  
 Inclusion 1: 027XY050NV  
 Inclusion 2: none  
 Inclusion 3: 027XY022NV

### **281--Trocken-Ragtown association**

#### ***Composition***

##### **Major Components**

Trocken very fine sandy loam, 0 to 2 percent slopes--50 percent  
 Ragtown loam, 0 to 2 percent slopes--35 percent

##### **Contrasting Inclusions**

Inclusion 1: Typic Camborthids, fine-loamy, mixed, mesic, 0 to 2 percent slopes--9 percent  
 Inclusion 2: Chuckles loam, 0 to 2 percent slopes--4 percent  
 Inclusion 3: Playas--2 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins  
 Trocken--Landform: Beach terraces  
 Ragtown--Landform: Lake terraces  
 Inclusion 1--Landform: Lake terraces; position on slope: upper  
 Inclusion 2--Landform: Lake terraces; position on slope: lower  
 Inclusion 3--Landform: Playas

#### ***Major Component Description***

##### **Trocken Series**

*Elevation:* 3,800 to 4,300 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

##### **Ragtown Series**

*Elevation:* 3,800 to 4,300 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days

*Texture:* Loam

*Drainage class:* Moderately well drained

*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

#### ***Dominant Present Vegetation***

Trocken: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, seepweed, shadscale

Ragtown: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed, shadscale

Inclusion 1: Black greasewood, inland saltgrass, seepweed, shadscale

Inclusion 2: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

Inclusion 3: None

#### ***Ecological Site***

Trocken: 027XY024NV

Ragtown: 027XY025NV

Inclusion 1: 027XY025NV

Inclusion 2: 027XY025NV

Inclusion 3: none

### **283--Trocken-Bluewing association**

#### ***Composition***

##### **Major Components**

Trocken gravelly sandy loam, 4 to 8 percent slopes--70 percent

Bluewing very gravelly loamy sand, 4 to 8 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic, 2 to 8 percent slopes--9 percent

Inclusion 2: Genegraf very gravelly sandy loam, 2 to 8 percent slopes--6 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Trocken--Landform: Barrier beaches

Bluewing--Landform: Drainageways

Inclusion 1--Landform: Drainageways; position on slope: upper

Inclusion 2--Landform: Fan remnants

#### ***Major Component Description***

##### **Trocken Series**

*Elevation:* 3,900 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### **Bluewing Series**

*Elevation:* 3,900 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loamy sand

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Bluewing: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage

#### ***Ecological Site***

Trocken: 027XY050NV

Bluewing: 027XY022NV

Inclusion 1: 027XY029NV

Inclusion 2: 027XY018NV

### **284--Trocken very gravelly sandy loam, 2 to 15 percent slopes**

#### ***Composition***

##### **Major Components**

Trocken very gravelly sandy loam, 2 to 15 percent slopes--85 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing very gravelly loamy sand, 2 to 8 percent slopes--8 percent

Inclusion 2: Stumble gravelly loamy sand, 4 to 8 percent slopes--7 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Trocken--Landform: Barrier beaches

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Sand sheets

#### ***Major Component Description***

##### **Trocken Series**

*Elevation:* 4,000 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 10 percent cobbles

*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Trocken: Bailey greasewood, Indian ricegrass, shadscale  
 Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Bailey greasewood, Indian ricegrass, fourwing saltbush, needleandthread

#### ***Ecological Site***

Trocken: 027XY050NV  
 Inclusion 1: 027XY022NV  
 Inclusion 2: 027XY009NV

### **290--Huxley gravelly clay loam, 0 to 2 percent slopes**

#### ***Composition***

**Major Components**  
 Huxley gravelly clay loam, 0 to 2 percent slopes--90 percent

#### ***Contrasting Inclusions***

Inclusion 1: Hooten very gravelly coarse sand, 0 to 2 percent slopes--6 percent  
 Inclusion 2: Isolde sand, 4 to 8 percent slopes--4 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins  
 Huxley--Landform: Lake terraces  
 Inclusion 1--Landform: Lake terraces  
 Inclusion 2--Landform: Dunes

#### ***Major Component Description***

**Huxley Series**  
*Elevation:* 3,800 to 4,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 40 percent gravel  
*Texture:* Gravelly clay loam  
*Drainage class:* Moderately well drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

#### ***Dominant Present Vegetation***

Huxley: Black greasewood, inland saltgrass, shadscale  
 Inclusion 1: Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Indian ricegrass, black greasewood, fourwing saltbush, shadscale

#### ***Ecological Site***

Huxley: 027XY025NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY016NV

### **300--Old Camp-Colbar-Rock outcrop association, steep**

#### ***Composition***

#### **Major Components**

Old Camp very stony loam, 30 to 50 percent slopes--50 percent  
 Colbar cobbly loam, 30 to 50 percent slopes--20 percent  
 Rock outcrop--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Jung very gravelly loam, 15 to 30 percent slopes--6 percent  
 Inclusion 2: Singatse very gravelly loam, 30 to 50 percent slopes--5 percent  
 Inclusion 3: Roca very stony loam, 30 to 50 percent slopes--4 percent

#### ***Map Unit Setting***

*Landscape position:* Mountains  
 Old Camp--Landform: Mountains; geomorphic position: backslope; aspect: north  
 Colbar--Landform: Mountains; geomorphic position: backslope; aspect: south  
 Rock outcrop--Landform: Mountains  
 Inclusion 1--Landform: Mountains; geomorphic position: summit; shape of slope: convex  
 Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: south  
 Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

#### ***Major Component Description***

#### **Old Camp Series**

*Elevation:* 5,000 to 7,000 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### **Colbar Series**

*Elevation:* 5,000 to 7,000 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Cobbly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Rock outcrop Miscellaneous Area**

*Elevation:* 5,000 to 7,000 feet

#### ***Dominant Present Vegetation***

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Colbar: Indian ricegrass, Nevada ephedra, Sandberg bluegrass, Wyoming big sagebrush, desert needlegrass

Rock outcrop: None

Inclusion 1: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Inclusion 2: Indian ricegrass, bud sagebrush, shadscale

Inclusion 3: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass

#### **Ecological Site**

Old Camp: 027XY007NV

Colbar: 027XY051NV

Rock outcrop: None

Inclusion 1: 027XY032NV

Inclusion 2: 027XY027NV

Inclusion 3: 024XY028NV

### **301--Old Camp-Mirkwood-Nemico association**

#### **Composition**

##### **Major Components**

Old Camp extremely stony loam, 30 to 50 percent slopes--45 percent

Mirkwood extremely stony loam, 30 to 75 percent slopes--25 percent

Nemico very stony sandy loam, 4 to 30 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--8 percent

Inclusion 2: Colbar very stony loam, 30 to 50 percent slopes--4 percent

Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 2 to 8 percent slopes--3 percent

#### **Map Unit Setting**

*Landscape position:* Mountains

Old Camp--Landform: Mountains; geomorphic position: backslope; aspect: north

Mirkwood--Landform: Mountains; geomorphic position: backslope; aspect: south

Nemico--Landform: Mountains; geomorphic position: summit; position on slope: lower

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

Inclusion 3--Landform: Drainageways

#### **Major Component Description**

##### **Old Camp Series**

*Elevation:* 5,000 to 6,500 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 100 days

*Surface rock fragments:* 15 percent stones and boulders; 10 percent cobbles; 20 percent gravel

*Texture:* Extremely stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Mirkwood Series**

*Elevation:* 5,000 to 6,500 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 20 percent stones and boulders; 15 percent cobbles; 35 percent gravel

*Texture:* Extremely stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Nemico Series**

*Elevation:* 5,000 to 6,500 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 110 days

*Texture:* Very stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Dominant Present Vegetation**

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Mirkwood: Anderson wolfberry, Indian ricegrass, desert needlegrass, littleleaf horsebrush, shadscale

Nemico: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

Inclusion 1: None

Inclusion 2: Indian ricegrass, Nevada ephedra, Sandberg bluegrass, Wyoming big sagebrush, desert needlegrass

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

#### **Ecological Site**

Old Camp: 027XY007NV

Mirkwood: 027XY017NV

Nemico: 027XY015NV

Inclusion 1: none

Inclusion 2: 027XY051NV

Inclusion 3: 027XY029NV

### **302--Old Camp-Singatse-Rock outcrop association**

#### **Composition**

##### **Major Components**

Old Camp very stony loam, 30 to 50 percent slopes--50 percent

Singatse very gravelly loam, 30 to 50 percent slopes--20 percent

Rock outcrop--15 percent

**Contrasting Inclusions**

Inclusion 1: Colbar cobbly loam, 30 to 50 percent slopes--8 percent

Inclusion 2: Theon very gravelly loam, 15 to 50 percent slopes--4 percent

Inclusion 3: Jung stony loam, 30 to 50 percent slopes--3 percent

**Map Unit Setting**

*Landscape position:* Mountains

Old Camp--Landform: Mountains; geomorphic position: backslope; aspect: north

Singatse--Landform: Mountains; geomorphic position: backslope; aspect: south

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex

Inclusion 3--Landform: Mountains; geomorphic position: summit; shape of slope: convex

**Major Component Description**

**Old Camp Series**

*Elevation:* 5,000 to 7,000 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 100 days

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Singatse Series**

*Elevation:* 5,000 to 7,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 110 days

*Texture:* Very gravelly loam

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Residuum derived from volcanic rocks

**Rock outcrop Miscellaneous Area**

*Elevation:* 5,000 to 7,000 feet

**Dominant Present Vegetation**

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Rock outcrop: None

Inclusion 1: Indian ricegrass, Nevada ephedra, Sandberg bluegrass, Wyoming big sagebrush, desert needlegrass

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, shadscale

Inclusion 3: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

**Ecological Site**

Old Camp: 027XY007NV

Singatse: 027XY027NV

Rock outcrop: None

Inclusion 1: 027XY051NV

Inclusion 2: 027XY019NV

Inclusion 3: 027XY032NV

**304--Old Camp-Bombadil-Loomer association**

**Composition**

**Major Components**

Old Camp very gravelly loam, 30 to 50 percent slopes--35 percent

Bombadil stony loam, 30 to 50 percent slopes--30 percent

Loomer gravelly loam, 8 to 30 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Rock outcrop--5 percent

Inclusion 2: Theon stony sandy loam, 15 to 50 percent slopes--4 percent

Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--4 percent

Inclusion 4: Bedwyr stony loam, 15 to 30 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Mountains

Old Camp--Landform: Mountains; geomorphic position: backslope; aspect: north

Bombadil--Landform: Mountains; geomorphic position: backslope; aspect: south

Loomer--Landform: Mountains; geomorphic position: summit

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: south

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Mountains; geomorphic position: summit; position on slope: lower

**Major Component Description**

**Old Camp Series**

*Elevation:* 4,800 to 6,200 feet

*Precipitation:* About 9 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 100 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Bombadil Series**

*Elevation:* 4,800 to 6,200 feet

*Precipitation:* About 10 inches

*Air temperature:* About 47 degrees  
*Frost-free season:* About 100 days  
*Texture:* Stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Loomer Series**

*Elevation:* 4,800 to 6,200 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 47 degrees  
*Frost-free season:* About 100 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### ***Dominant Present Vegetation***

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Bombadil: Indian ricegrass, Nevada ephedra, Wyoming big sagebrush, desert needlegrass  
 Loomer: Sandberg bluegrass, Thurber needlegrass, spiny hopsage  
 Inclusion 1: None  
 Inclusion 2: Bailey greasewood, Indian ricegrass, shadscale, winterfat  
 Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 4: Bailey greasewood, Indian ricegrass, desert needlegrass, galleta, shadscale

#### ***Ecological Site***

Old Camp: 027XY007NV  
 Bombadil: 027XY051NV  
 Loomer: 027XY079NV  
 Inclusion 1: none  
 Inclusion 2: 027XY019NV  
 Inclusion 3: 027XY029NV  
 Inclusion 4: 027XY015NV

### **305--Old Camp-Colbar-Rock outcrop association**

#### ***Composition***

##### **Major Components**

Old Camp very cobbly loam, 4 to 15 percent slopes--40 percent  
 Colbar very cobbly loam, 15 to 30 percent slopes--30 percent  
 Rock outcrop--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Roca very stony loam, 30 to 50 percent slopes--6 percent  
 Inclusion 2: Nemico very gravelly loam, 4 to 15 percent slopes--5 percent  
 Inclusion 3: Jung very gravelly loam, 15 to 30 percent slopes--4 percent

#### ***Map Unit Setting***

*Landscape position:* Mountains  
 Old Camp--Landform: Mountains; geomorphic position: backslope; aspect: north  
 Colbar--Landform: Mountains; geomorphic position: backslope; aspect: south  
 Rock outcrop--Landform: Mountains  
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; aspect: south  
 Inclusion 2--Landform: Mountains; geomorphic position: summit; position on slope: lower  
 Inclusion 3--Landform: Mountains; geomorphic position: summit

#### ***Major Component Description***

##### **Old Camp Series**

*Elevation:* 5,000 to 7,000 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very cobbly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Colbar Series**

*Elevation:* 5,000 to 7,000 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very cobbly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Rock outcrop Miscellaneous Area**

*Elevation:* 5,000 to 7,000 feet

#### ***Dominant Present Vegetation***

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Colbar: Indian ricegrass, Nevada ephedra, Sandberg bluegrass, Wyoming big sagebrush, desert needlegrass  
 Rock outcrop: None  
 Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale  
 Inclusion 3: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

#### ***Ecological Site***

Old Camp: 027XY007NV  
 Colbar: 027XY051NV  
 Rock outcrop: None  
 Inclusion 1: 024XY028NV  
 Inclusion 2: 027XY013NV  
 Inclusion 3: 027XY032NV

### 307--Old Camp-Theon-Rock outcrop association

#### *Composition*

##### **Major Components**

Old Camp very stony loam, 50 to 75 percent slopes--45 percent

Theon very stony fine sandy loam, 30 to 75 percent slopes--25 percent

Rock outcrop--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Mirkwood extremely stony loam, 50 to 75 percent slopes--6 percent

Inclusion 2: Stewval very stony fine sandy loam, 30 to 50 percent slopes--6 percent

Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 8 percent slopes--3 percent

#### *Map Unit Setting*

*Landscape position:* Mountains

Old Camp--Landform: Mountains; geomorphic position: backslope; aspect: north

Theon--Landform: Mountains; geomorphic position: backslope; aspect: south

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

Inclusion 2--Landform: Mountains; geomorphic position: summit

Inclusion 3--Landform: Drainageways

#### *Major Component Description*

##### **Old Camp Series**

*Elevation:* 6,000 to 7,200 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 100 days

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

##### **Theon Series**

*Elevation:* 6,000 to 7,200 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Very stony fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

##### **Rock outcrop Miscellaneous Area**

*Elevation:* 6,000 to 7,200 feet

#### *Dominant Present Vegetation*

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Theon: Bailey greasewood, Indian ricegrass, desert needlegrass, littleleaf horsebrush, shadscale

Rock outcrop: None

Inclusion 1: Anderson wolfberry, desert needlegrass, littleleaf horsebrush, ricegrass, shadscale

Inclusion 2: Sandberg bluegrass, black sagebrush, low sagebrush, pine bluegrass, shadscale

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

#### *Ecological Site*

Old Camp: 027XY007NV

Theon: 027XY019NV

Rock outcrop: None

Inclusion 1: 027XY017NV

Inclusion 2: 027XY032NV

Inclusion 3: 027XY029NV

### 308--Old Camp-Clanlaine-Colbar association

#### *Composition*

##### **Major Components**

Old Camp extremely stony loam, 30 to 50 percent slopes--40 percent

Clanlaine very gravelly loam, 30 to 50 percent slopes--30 percent

Colbar cobbly loam, 30 to 50 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Stewval extremely gravelly fine sandy loam, 15 to 30 percent slopes--8 percent

Inclusion 2: Duco stony loam, 15 to 50 percent slopes--4 percent

Inclusion 3: Rock outcrop--3 percent

#### *Map Unit Setting*

*Landscape position:* Mountains

Old Camp--Landform: Mountains; geomorphic position: backslope

Clanlaine--Landform: Mountains; geomorphic position: backslope; aspect: north

Colbar--Landform: Mountains; geomorphic position: backslope; aspect: south

Inclusion 1--Landform: Mountains; geomorphic position: summit

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: north

Inclusion 3--Landform: Mountains

#### *Major Component Description*

##### **Old Camp Series**

*Elevation:* 5,500 to 6,800 feet

*Precipitation:* About 10 inches

*Air temperature:* About 45 degrees

*Frost-free season:* About 90 days

*Texture:* Extremely stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

**Clan Alpine Series***Elevation:* 6,000 to 6,800 feet*Precipitation:* About 12 inches*Air temperature:* About 42 degrees*Frost-free season:* About 80 days*Texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Colbar Series***Elevation:* 5,500 to 6,800 feet*Precipitation:* About 10 inches*Air temperature:* About 46 degrees*Frost-free season:* About 100 days*Texture:* Cobbly loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from volcanic rocks**Dominant Present Vegetation**

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Clan Alpine: Idaho fescue, lupine, mountain big sagebrush, pine bluegrass, singleleaf pinyon, snowberry

Colbar: Indian ricegrass, Nevada ephedra, Sandberg bluegrass, Wyoming big sagebrush, desert needlegrass

Inclusion 1: Sandberg bluegrass, black sagebrush, low sagebrush, pine bluegrass, shadscale

Inclusion 2: Utah juniper, Wyoming big sagebrush, antelope bitterbrush, bluebunch wheatgrass, singleleaf pinyon

Inclusion 3: None

**Ecological Site**

Old Camp: 027XY007NV

Clan Alpine: 027XY080NV

Colbar: 027XY051NV

Inclusion 1: 027XY032NV

Inclusion 2: 027XY081NV

Inclusion 3: none

**309--Old Camp-Pickup-Loomer association****Composition****Major Components**

Old Camp very stony loam, 30 to 50 percent slopes--30 percent

Pickup very stony loam, 30 to 50 percent slopes--30 percent

Loomer gravelly loam, 8 to 30 percent slopes--25 percent

**Contrasting Inclusions**

Inclusion 1: Kram very stony loam, 15 to 50 percent slopes--6 percent

Inclusion 2: Aridic Argixerolls, loamy, mixed, mesic, shallow, 2 to 8 percent slopes--4 percent

Inclusion 3: Rock outcrop--3 percent

Inclusion 4: Duco stony loam, 15 to 50 percent slopes--2 percent

**Map Unit Setting***Landscape position:* Mountains

Old Camp--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Pickup--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Loomer--Landform: Mountains; geomorphic position: summit

Inclusion 1--Landform: Mountains; geomorphic position: backslope

Inclusion 2--Landform: Stream terraces

Inclusion 3--Landform: Mountains; geomorphic position: summit

Inclusion 4--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

**Major Component Description****Old Camp Series***Elevation:* 5,800 to 7,000 feet*Precipitation:* About 9 inches*Air temperature:* About 47 degrees*Frost-free season:* About 100 days*Texture:* Very stony loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Pickup Series***Elevation:* 5,800 to 7,000 feet*Precipitation:* About 10 inches*Air temperature:* About 47 degrees*Frost-free season:* About 90 days*Surface rock fragments:* 3 percent stones and boulders; 2 percent cobbles; 15 percent gravel*Texture:* Very stony loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Loomer Series***Elevation:* 5,800 to 7,000 feet*Precipitation:* About 9 inches*Air temperature:* About 47 degrees*Frost-free season:* About 100 days*Texture:* Gravelly loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from volcanic rocks**Dominant Present Vegetation**

Old Camp: Nevada ephedra, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Pickup: Sandberg bluegrass, Thurber needlegrass, pine bluegrass

Loomer: Sandberg bluegrass, Thurber needlegrass, spiny hopsage



- Inclusion 1: Utah juniper, black sagebrush, bottlebrush squirreltail, green ephedra, singleleaf pinyon  
 Inclusion 2: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage  
 Inclusion 3: None  
 Inclusion 4: Utah juniper, Wyoming big sagebrush, antelope bitterbrush, bluebunch wheatgrass, singleleaf pinyon

#### ***Ecological Site***

Old Camp: 027XY007NV  
 Pickup: 027XY079NV  
 Loomer: 027XY079NV  
 Inclusion 1: 024XY051NV  
 Inclusion 2: 027XY008NV  
 Inclusion 3: none  
 Inclusion 4: 027XY081NV

### **310--Rednik-Trocken-Bluewing association**

#### ***Composition***

##### **Major Components**

Rednik very gravelly sandy loam, 4 to 8 percent slopes--35 percent  
 Trocken gravelly fine sandy loam, 4 to 8 percent slopes--30 percent  
 Bluewing stony loamy sand, 4 to 8 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--8 percent  
 Inclusion 2: Rednik very gravelly loam, 15 to 30 percent slopes--7 percent

#### ***Map Unit Setting***

*Landscape position:* Piedmont slopes  
 Rednik--Landform: Fan remnants; geomorphic position: summit  
 Trocken--Landform: Beach terraces  
 Bluewing--Landform: Inset fans  
 Inclusion 1--Landform: Drainageways  
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

#### ***Major Component Description***

##### **Rednik Series**

*Elevation:* 3,800 to 4,100 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

##### **Trocken Series**

*Elevation:* 3,800 to 4,100 feet

*Precipitation:* About 6 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Bluewing Series**

*Elevation:* 3,800 to 4,100 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Stony loamy sand  
*Drainage class:* Excessively drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Rednik: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Bluewing: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### ***Ecological Site***

Rednik: 027XY018NV  
 Trocken: 027XY050NV  
 Bluewing: 027XY050NV  
 Inclusion 1: 027XY022NV  
 Inclusion 2: 027XY018NV

### **311--Rednik-Trocken-Genegraf association**

#### ***Composition***

##### **Major Components**

Rednik very gravelly sandy loam, 2 to 8 percent slopes--45 percent  
 Trocken gravelly fine sandy loam, 2 to 8 percent slopes--25 percent  
 Genegraf very gravelly sandy loam, 2 to 8 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing very cobbly loamy sand, 2 to 4 percent slopes--6 percent  
 Inclusion 2: Bluewing stony loamy sand, 2 to 4 percent slopes--6 percent  
 Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 8 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Piedmont slopes  
 Rednik--Landform: Fan remnants; geomorphic position: summit

Trocken--Landform: Beach terraces  
 Genegraf--Landform: Fan remnants; position on slope: upper  
 Inclusion 1--Landform: Drainageways  
 Inclusion 2--Landform: Inset fans  
 Inclusion 3--Landform: Dunes; position on slope: upper

### ***Major Component Description***

#### **Rednik Series**

*Elevation:* 3,800 to 4,400 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Trocken Series**

*Elevation:* 3,800 to 4,400 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Genegraf Series**

*Elevation:* 3,800 to 4,400 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

### ***Dominant Present Vegetation***

Rednik: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage  
 Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

### ***Ecological Site***

Rednik: 027XY018NV  
 Trocken: 027XY050NV  
 Genegraf: 027XY018NV  
 Inclusion 1: 027XY022NV  
 Inclusion 2: 027XY050NV  
 Inclusion 3: 027XY029NV

## **313--Rednik-Ricert-Trocken association**

### ***Composition***

#### **Major Components**

Rednik very gravelly sandy loam, 8 to 15 percent slopes--40 percent  
 Ricert gravelly loam, 2 to 8 percent slopes--25 percent  
 Trocken gravelly very fine sandy loam, 2 to 8 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic, 4 to 8 percent slopes--8 percent  
 Inclusion 2: Bluewing very gravelly loamy sand, 2 to 8 percent slopes--7 percent

### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Rednik--Landform: Fan remnants; geomorphic position: backslope  
 Ricert--Landform: Fan remnants; geomorphic position: summit  
 Trocken--Landform: Inset fans  
 Inclusion 1--Landform: Dunes; position on slope: upper  
 Inclusion 2--Landform: Drainageways; position on slope: lower

### ***Major Component Description***

#### **Rednik Series**

*Elevation:* 4,200 to 5,400 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Ricert Series**

*Elevation:* 4,200 to 5,400 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### **Trocken Series**

*Elevation:* 4,200 to 5,400 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Rednik: Indian ricegrass, bottlebrush squirreltail, bud

sagebrush, shadscale  
 Ricert: Indian ricegrass, bottlebrush squirreltail, winterfat  
 Trocken: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat  
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

### ***Ecological Site***

Rednik: 027XY013NV  
 Ricert: 027XY013NV  
 Trocken: 027XY013NV  
 Inclusion 1: 027XY029NV  
 Inclusion 2: 027XY022NV

## **315--Rednik-Genegraf-Barnmot association**

### ***Composition***

#### **Major Components**

Rednik very gravelly fine sandy loam, 15 to 30 percent slopes--35 percent  
 Genegraf very gravelly sandy loam, 2 to 8 percent slopes--35 percent  
 Barnmot very gravelly clay, 30 to 50 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Trocken very gravelly sandy loam, 2 to 4 percent slopes--9 percent  
 Inclusion 2: Bluewing very gravelly loamy sand, 0 to 4 percent slopes--3 percent  
 Inclusion 3: Ricert sand, 2 to 15 percent slopes--2 percent  
 Inclusion 4: Badland--1 percent

### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Rednik--Landform: Fan remnants; geomorphic position: backslope  
 Genegraf--Landform: Fan remnants; geomorphic position: summit  
 Barnmot--Landform: Fan remnants; geomorphic position: backslope  
 Inclusion 1--Landform: Inset fans  
 Inclusion 2--Landform: Drainageways  
 Inclusion 3--Landform: Fan remnants; geomorphic position: summit; position on slope: upper  
 Inclusion 4--Landform: Scarp slopes

### ***Major Component Description***

#### **Rednik Series**

*Elevation:* 4,400 to 6,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Genegraf Series**

*Elevation:* 4,400 to 6,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

#### **Barnmot Series**

*Elevation:* 4,400 to 6,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 1 percent stones and boulders; 5 percent cobbles; 45 percent gravel  
*Texture:* Very gravelly clay  
*Drainage class:* Well drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

### ***Dominant Present Vegetation***

Rednik: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage  
 Barnmot: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Bailey greasewood, Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread  
 Inclusion 4: None

### ***Ecological Site***

Rednik: 027XY018NV  
 Genegraf: 027XY018NV  
 Barnmot: 027XY027NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY022NV  
 Inclusion 3: 027XY009NV  
 Inclusion 4: none

## **316--Rednik association**

### ***Composition***

#### **Major Components**

Rednik very gravelly sandy loam, 2 to 15 percent slopes--45 percent  
 Rednik very gravelly sandy loam, 15 to 30 percent slopes--45 percent

#### **Contrasting Inclusions**

Inclusion 1: Trocken gravelly fine sandy loam, 2 to 4 percent slopes--5 percent  
 Inclusion 2: Hawsley sand, 2 to 8 percent slopes--3 percent

Inclusion 3: Bluewing very gravelly sand, 4 to 15 percent slopes--2 percent

#### **Map Unit Setting**

*Landscape position:* Fan piedmonts  
 Rednik--Landform: Fan remnants; geomorphic position: summit  
 Rednik--Landform: Fan remnants; geomorphic position: backslope  
 Inclusion 1--Landform: Fan aprons  
 Inclusion 2--Landform: Sand sheets  
 Inclusion 3--Landform: Drainageways

#### **Major Component Description**

##### **Rednik Series**

*Elevation:* 4,100 to 4,350 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

##### **Rednik Series**

*Elevation:* 4,100 to 4,350 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Dominant Present Vegetation**

Rednik: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Rednik: Indian ricegrass, shadscale, winterfat  
 Inclusion 1: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale  
 Inclusion 2: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
 Inclusion 3: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

#### **Ecological Site**

Rednik: 027XY018NV  
 Rednik: 027XY027NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY009NV  
 Inclusion 3: 027XY022NV

### **317--Rednik-Cleaver-Trocken association**

#### **Composition**

##### **Major Components**

Rednik very gravelly sandy loam, 2 to 8 percent slopes--45 percent  
 Cleaver gravelly loam, 4 to 8 percent slopes--25

percent

Trocken very gravelly sandy loam, 2 to 8 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Bango sandy loam, 2 to 4 percent slopes--6 percent  
 Inclusion 2: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--4 percent

#### **Map Unit Setting**

*Landscape position:* Intermontane basins  
 Rednik--Landform: Fan remnants; geomorphic position: summit; position on slope: lower  
 Cleaver--Landform: Fan remnants; geomorphic position: summit; position on slope: upper  
 Trocken--Landform: Beach terraces; position on slope: lower  
 Inclusion 1--Landform: Lake terraces  
 Inclusion 2--Landform: Drainageways

#### **Major Component Description**

##### **Rednik Series**

*Elevation:* 4,000 to 5,200 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

##### **Cleaver Series**

*Elevation:* 4,000 to 5,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

##### **Trocken Series**

*Elevation:* 4,000 to 5,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Dominant Present Vegetation**

Rednik: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Cleaver: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 1: Thurber needlegrass, big sagebrush, bluebunch wheatgrass  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, spiny hopsage

***Ecological Site***

Rednik: 027XY018NV  
 Cleaver: 027XY018NV  
 Trocken: 027XY050NV  
 Inclusion 1: 024XY028NV  
 Inclusion 2: 027XY022NV

**320--Jung-Old Camp-Rock outcrop association*****Composition*****Major Components**

Jung very gravelly loam, 15 to 30 percent slopes--40 percent  
 Old Camp very stony loam, 30 to 50 percent slopes--25 percent  
 Rock outcrop--20 percent

**Contrasting Inclusions**

Inclusion 1: Roca very gravelly loam, 30 to 50 percent slopes--6 percent  
 Inclusion 2: Duco very stony loam, 15 to 30 percent slopes--5 percent  
 Inclusion 3: Nemico stony loam, 15 to 30 percent slopes--4 percent

***Map Unit Setting***

*Landscape position:* Mountains and foothills  
 Jung--Landform: Mountains; geomorphic position: summit; shape of slope: convex  
 Old Camp--Landform: Mountains; geomorphic position: backslope; shape of slope: concave  
 Rock outcrop--Landform: Mountains  
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south  
 Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north  
 Inclusion 3--Landform: Hills; geomorphic position: backslope; position on slope: lower

***Major Component Description*****Jung Series**

*Elevation:* 5,000 to 7,200 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 95 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

**Old Camp Series**

*Elevation:* 5,000 to 7,200 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from

volcanic rocks

**Rock outcrop Miscellaneous Area**

*Elevation:* 5,000 to 7,200 feet

***Dominant Present Vegetation***

Jung: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale  
 Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Rock outcrop: None  
 Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass  
 Inclusion 2: Utah juniper, Wyoming big sagebrush, antelope bitterbrush, bluebunch wheatgrass, singleleaf pinyon  
 Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

***Ecological Site***

Jung: 027XY032NV  
 Old Camp: 027XY007NV  
 Rock outcrop: None  
 Inclusion 1: 024XY028NV  
 Inclusion 2: 027XY081NV  
 Inclusion 3: 027XY013NV

**321--Jung-Desatoya-Roca association*****Composition*****Major Components**

Jung very gravelly loam, 15 to 30 percent slopes--40 percent  
 Desatoya very gravelly loam, 4 to 8 percent slopes--25 percent  
 Roca very stony loam, 30 to 50 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent  
 Inclusion 2: Old Camp very stony loam, 30 to 50 percent slopes--5 percent  
 Inclusion 3: Typic Nadurargids, loamy, mixed, mesic, shallow, 15 to 30 percent slopes--4 percent

***Map Unit Setting***

*Landscape position:* Hills and intermontane basins  
 Jung--Landform: Hills; geomorphic position: backslope  
 Desatoya--Landform: Fan remnants; geomorphic position: summit  
 Roca--Landform: Hills; geomorphic position: backslope; position on slope: upper; aspect: south  
 Inclusion 1--Landform: Hills  
 Inclusion 2--Landform: Hills; geomorphic position: backslope; shape of slope: concave  
 Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower

**Major Component Description****Jung Series***Elevation:* 5,000 to 7,200 feet*Precipitation:* About 9 inches*Air temperature:* About 48 degrees*Frost-free season:* About 95 days*Texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from volcanic rocks**Desatoya Series***Elevation:* 5,000 to 7,200 feet*Precipitation:* About 10 inches*Air temperature:* About 47 degrees*Frost-free season:* About 100 days*Surface rock fragments:* 40 percent gravel*Texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Roca Series***Elevation:* 5,500 to 7,200 feet*Precipitation:* About 10 inches*Air temperature:* About 45 degrees*Frost-free season:* About 90 days*Texture:* Very stony loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from volcanic rocks**Dominant Present Vegetation**

Jung: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Desatoya: Sandberg bluegrass, black sagebrush, low sagebrush, pine bluegrass, shadscale

Roca: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass

Inclusion 1: None

Inclusion 2: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

**Ecological Site**

Jung: 027XY032NV

Desatoya: 027XY032NV

Roca: 024XY028NV

Inclusion 1: none

Inclusion 2: 027XY007NV

Inclusion 3: 027XY013NV

**322--Jung-Puett-Bufferan association****Composition****Major Components**

Jung very gravelly loam, 15 to 30 percent slopes--40 percent

Puett fine sandy loam, 15 to 30 percent slopes--25 percent

Bufferan gravelly loam, 4 to 8 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Aridic Argixerolls, fine-loamy, mixed, mesic, 2 to 8 percent slopes--6 percent

Inclusion 2: Roca very gravelly loam, 15 to 30 percent slopes--6 percent

Inclusion 3: Rock outcrop--3 percent

**Map Unit Setting***Landscape position:* Hills and intermontane basins

Jung--Landform: Hills

Puett--Landform: Hills; geomorphic position: backslope

Bufferan--Landform: Fan remnants

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Hills; geomorphic position: backslope; position on slope: upper; aspect: south

Inclusion 3--Landform: Hills

**Major Component Description****Jung Series***Elevation:* 6,000 to 6,500 feet*Precipitation:* About 9 inches*Air temperature:* About 48 degrees*Frost-free season:* About 95 days*Texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from volcanic rocks**Puett Series***Elevation:* 6,000 to 6,500 feet*Precipitation:* About 9 inches*Air temperature:* About 49 degrees*Frost-free season:* About 110 days*Texture:* Fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from tuffaceous rocks**Bufferan Series***Elevation:* 6,000 to 6,500 feet*Precipitation:* About 9 inches*Air temperature:* About 48 degrees*Frost-free season:* About 100 days*Texture:* Gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Dominant Present Vegetation**

Jung: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Puett: Indian ricegrass, Sandberg bluegrass, black sagebrush, needleandthread, shadscale

Bufferan: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Inclusion 1: Anderson peachbrush, Wyoming big sagebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass  
 Inclusion 3: None

#### ***Ecological Site***

Jung: 027XY032NV  
 Puett: 028BY016NV  
 Buffaran: 027XY008NV  
 Inclusion 1: 027XY029NV  
 Inclusion 2: 024XY028NV  
 Inclusion 3: none

### **324--Jung-Clanlaine-Colbar association**

#### ***Composition***

##### **Major Components**

Jung very gravelly loam, 30 to 50 percent slopes--35 percent  
 Clanlaine very gravelly loam, 30 to 50 percent slopes--30 percent  
 Colbar cobbly loam, 30 to 50 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Old Camp very stony loam, 30 to 50 percent slopes--8 percent  
 Inclusion 2: Rock outcrop--4 percent  
 Inclusion 3: Roca very gravelly loam, 30 to 50 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Mountains

Jung--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Clanlaine--Landform: Mountains; geomorphic position: backslope; aspect: north

Colbar--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Inclusion 2--Landform: Mountains

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

#### ***Major Component Description***

##### **Jung Series**

*Elevation:* 5,000 to 7,000 feet  
*Precipitation:* About 10 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 95 days  
*Surface rock fragments:* 5 percent cobbles; 30 percent gravel  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Clanlaine Series**

*Elevation:* 6,000 to 7,000 feet  
*Precipitation:* About 12 inches  
*Air temperature:* About 42 degrees  
*Frost-free season:* About 80 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Colbar Series**

*Elevation:* 5,000 to 7,000 feet  
*Precipitation:* About 10 inches  
*Air temperature:* About 46 degrees  
*Frost-free season:* About 100 days  
*Texture:* Cobbly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Jung: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale  
 Clanlaine: Idaho fescue, lupine, mountain big sagebrush, pine bluegrass, singleleaf pinyon, snowberry  
 Colbar: Indian ricegrass, Nevada ephedra, Sandberg bluegrass, Wyoming big sagebrush, desert needlegrass  
 Inclusion 1: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Inclusion 2: None  
 Inclusion 3: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass

#### ***Ecological Site***

Jung: 027XY032NV  
 Clanlaine: 027XY080NV  
 Colbar: 027XY051NV  
 Inclusion 1: 027XY007NV  
 Inclusion 2: none  
 Inclusion 3: 024XY028NV

### **325--Jung-Old Camp-Clanlaine association**

#### ***Composition***

##### **Major Components**

Jung very gravelly loam, 30 to 50 percent slopes--35 percent  
 Old Camp very stony loam, 30 to 50 percent slopes--30 percent  
 Clanlaine very gravelly loam, 30 to 50 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent  
 Inclusion 2: Colbar cobbly loam, 30 to 50 percent slopes--5 percent  
 Inclusion 3: Nemico stony loam, 15 to 30 percent

slopes--4 percent

### **Map Unit Setting**

*Landscape position:* Mountains

Jung--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Old Camp--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Clanalpine--Landform: Mountains; geomorphic position: backslope; aspect: north

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: backslope; aspect: south

Inclusion 3--Landform: Mountains; geomorphic position: summit; position on slope: lower

### **Major Component Description**

#### **Jung Series**

*Elevation:* 5,000 to 7,000 feet

*Precipitation:* About 9 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 95 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Old Camp Series**

*Elevation:* 5,000 to 7,000 feet

*Precipitation:* About 9 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 100 days

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Clanalpine Series**

*Elevation:* 6,000 to 7,000 feet

*Precipitation:* About 12 inches

*Air temperature:* About 42 degrees

*Frost-free season:* About 80 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### **Dominant Present Vegetation**

Jung: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Clanalpine: Idaho fescue, lupine, mountain big sagebrush, pine bluegrass, singleleaf pinyon, snowberry

Inclusion 1: None

Inclusion 2: Indian ricegrass, Nevada ephedra, Sandberg bluegrass, Wyoming big sagebrush, desert needlegrass

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

### **Ecological Site**

Jung: 027XY032NV

Old Camp: 027XY007NV

Clanalpine: 027XY080NV

Inclusion 1: none

Inclusion 2: 027XY051NV

Inclusion 3: 027XY013NV

## **330--Settlement-Louderback-Rustigate association**

### **Composition**

#### **Major Components**

Settlement silty clay, 0 to 2 percent slopes--40 percent

Louderback sand, 0 to 2 percent slopes--30 percent

Rustigate silt loam, 0 to 2 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Slaw sandy loam, 0 to 2 percent slopes--6 percent

Inclusion 2: Kolda silt loam, 0 to 2 percent slopes--5 percent

Inclusion 3: Water--4 percent

### **Map Unit Setting**

*Landscape position:* Intermontane basins

Settlement--Landform: Lake terraces; position on slope: lower

Louderback--Landform: Lake terraces; position on slope: upper

Rustigate--Landform: Lake terraces

Inclusion 1--Landform: Drainageways; position on slope: upper

Inclusion 2--Landform: Lake terraces

Inclusion 3--Landform: Depressions

### **Major Component Description**

#### **Settlement Series**

*Elevation:* 3,800 to 4,000 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Silty clay

*Drainage class:* Poorly drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### **Louderback Series**

*Elevation:* 3,800 to 4,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Sand

*Drainage class:* Somewhat poorly drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### **Rustigate Series**

*Elevation:* 3,800 to 4,000 feet

*Precipitation:* About 5 inches



*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silt loam  
*Drainage class:* Somewhat poorly drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Settlement: Alkali sacaton, basin wildrye, big sagebrush, inland saltgrass, shadscale  
 Louderback: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed  
 Rustigate: Alkali sacaton, black greasewood, inland saltgrass, seepweed  
 Inclusion 1: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale  
 Inclusion 2: Cattail, creeping spikerush  
 Inclusion 3: None

#### ***Ecological Site***

Settlement: 027XY006NV  
 Louderback: 027XY005NV  
 Rustigate: 027XY005NV  
 Inclusion 1: 027XY041NV  
 Inclusion 2: 027XY001NV  
 Inclusion 3: none

### **331--Settlement-Chuckles-Rustigate association**

#### ***Composition***

##### **Major Components**

Settlement silty clay loam, 0 to 2 percent slopes--40 percent  
 Chuckles loam, 0 to 2 percent slopes--25 percent  
 Rustigate silt loam, 0 to 2 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Slaw sandy loam, 0 to 2 percent slopes--6 percent  
 Inclusion 2: Water--5 percent  
 Inclusion 3: Kolda silt loam, 0 to 2 percent slopes--4 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins  
 Settlement--Landform: Lake terraces; position on slope: lower  
 Chuckles--Landform: Lake terraces; position on slope: upper  
 Rustigate--Landform: Lake terraces  
 Inclusion 1--Landform: Drainageways; position on slope: upper  
 Inclusion 2--Landform: Depressions  
 Inclusion 3--Landform: Lake terraces

#### ***Major Component Description***

##### **Settlement Series**

*Elevation:* 5,000 to 5,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days  
*Texture:* Silty clay loam  
*Drainage class:* Poorly drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Chuckles Series**

*Elevation:* 5,000 to 5,200 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Loam  
*Drainage class:* Moderately well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

#### **Rustigate Series**

*Elevation:* 5,000 to 5,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silt loam  
*Drainage class:* Somewhat poorly drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Settlement: Alkali sacaton, basin wildrye, big sagebrush, inland saltgrass, shadscale  
 Chuckles: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, shadscale  
 Rustigate: Alkali sacaton, black greasewood, inland saltgrass, seepweed  
 Inclusion 1: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale  
 Inclusion 2: None  
 Inclusion 3: Cattail, creeping spikerush

#### ***Ecological Site***

Settlement: 027XY006NV  
 Chuckles: 027XY024NV  
 Rustigate: 027XY005NV  
 Inclusion 1: 027XY041NV  
 Inclusion 2: none  
 Inclusion 3: 027XY001NV

### **340--Slaw-Juva-Wholan association**

#### ***Composition***

##### **Major Components**

Slaw silt loam, 0 to 2 percent slopes--40 percent  
 Juva loam, 0 to 2 percent slopes--25 percent  
 Wholan silt loam, 0 to 2 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Stumble loamy sand, 0 to 4 percent slopes--6 percent  
 Inclusion 2: Mazuma sandy loam, 0 to 4 percent slopes--5 percent  
 Inclusion 3: Settlement silty clay loam, 0 to 2 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Intermontane basins

Slaw--Landform: Stream terraces

Juva--Landform: Stream terraces

Wholan--Landform: Inset fans

Inclusion 1--Landform: Sand sheets

Inclusion 2--Landform: Lake terraces; position on slope: upper

Inclusion 3--Landform: Lake terraces; position on slope: lower; shape of slope: concave

**Major Component Description****Slaw Series***Elevation:* 3,800 to 4,100 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Silt loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Juva Series***Elevation:* 3,800 to 4,100 feet*Precipitation:* About 6 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Wholan Series***Elevation:* 3,800 to 4,100 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Silt loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Dominant Present Vegetation**

Slaw: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale

Juva: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Wholan: Indian ricegrass, bottlebrush squirreltail, winterfat

Inclusion 1: Bailey greasewood, Indian ricegrass, fourwing saltbush, needleandthread

Inclusion 2: Alkali sacaton, black greasewood, inland saltgrass, shadscale

Inclusion 3: Alkali sacaton, basin wildrye, big sagebrush, inland saltgrass, shadscale

**Ecological Site**

Slaw: 027XY041NV

Juva: 027XY018NV

Wholan: 027XY013NV

Inclusion 1: 027XY009NV

Inclusion 2: 027XY025NV

Inclusion 3: 027XY006NV

**341--Slaw-Chuckles association****Composition****Major Components**

Slaw silt loam, 0 to 2 percent slopes--65 percent

Chuckles loam, 0 to 2 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Settlement silty clay loam, 0 to 2 percent slopes--6 percent

Inclusion 2: Rebel fine sandy loam, 0 to 2 percent slopes, occasionally flooded--5 percent

Inclusion 3: Bango loamy sand, 0 to 2 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Intermontane basins

Slaw--Landform: Stream terraces

Chuckles--Landform: Lake terraces; position on slope: lower

Inclusion 1--Landform: Lake plains; shape of slope: concave

Inclusion 2--Landform: Stream terraces; position on slope: upper

Inclusion 3--Landform: Lake terraces; position on slope: upper

**Major Component Description****Slaw Series***Elevation:* 3,800 to 4,000 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Silt loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments**Chuckles Series***Elevation:* 3,800 to 4,000 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Loam*Drainage class:* Moderately well drained*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments**Dominant Present Vegetation**

Slaw: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale

Chuckles: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

Inclusion 1: Alkali sacaton, basin wildrye, big sagebrush, inland saltgrass, shadscale

Inclusion 2: Basin big sagebrush

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

**Ecological Site**

Slaw: 027XY041NV

Chuckles: 027XY025NV

Inclusion 1: 027XY006NV  
 Inclusion 2: 027XY003NV  
 Inclusion 3: 027XY018NV

### 342--Slaw-Mazuma-Hessing association

#### *Composition*

##### **Major Components**

Slaw silt loam, 0 to 2 percent slopes--40 percent  
 Mazuma silt loam, 0 to 2 percent slopes--25 percent  
 Hessing silt loam, 0 to 4 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Bango loamy sand, 0 to 2 percent slopes--6 percent  
 Inclusion 2: Chuckles loam, 0 to 2 percent slopes--5 percent  
 Inclusion 3: Dun Glen gravelly sandy loam, 0 to 4 percent slopes--4 percent

#### *Map Unit Setting*

*Landscape position:* Intermontane basins  
 Slaw--Landform: Stream terraces  
 Mazuma--Landform: Lake terraces  
 Hessing--Landform: Beach plains; position on slope: upper  
 Inclusion 1--Landform: Lake plains  
 Inclusion 2--Landform: Lake terraces; position on slope: lower; shape of slope: concave  
 Inclusion 3--Landform: Fan skirts

#### *Major Component Description*

##### **Slaw Series**

*Elevation:* 3,800 to 4,100 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silt loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

##### **Mazuma Series**

*Elevation:* 3,800 to 4,100 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silt loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

##### **Hessing Series**

*Elevation:* 3,800 to 4,100 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silt loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### *Dominant Present Vegetation*

Slaw: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale  
 Mazuma: Alkali sacaton, black greasewood, inland saltgrass, shadscale  
 Hessing: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, burrobrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Black greasewood, seepweed, shadscale  
 Inclusion 3: Basin wildrye, black greasewood, inland saltgrass, shadscale

#### *Ecological Site*

Slaw: 027XY041NV  
 Mazuma: 027XY025NV  
 Hessing: 027XY013NV  
 Inclusion 1: 027XY022NV  
 Inclusion 2: 027XY025NV  
 Inclusion 3: 027XY025NV

### 343--Slaw-Trocken-Chuckles association

#### *Composition*

##### **Major Components**

Slaw silt loam, 0 to 4 percent slopes--40 percent  
 Trocken very gravelly loam, 0 to 2 percent slopes--30 percent  
 Chuckles loam, 0 to 2 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing gravelly loamy sand, 2 to 8 percent slopes--6 percent  
 Inclusion 2: Bluewing stony loamy sand, 2 to 8 percent slopes--2 percent  
 Inclusion 3: Mazuma silt loam, 0 to 4 percent slopes--2 percent

#### *Map Unit Setting*

*Landscape position:* Intermontane basins  
 Slaw--Landform: Stream terraces  
 Trocken--Landform: Inset fans  
 Chuckles--Landform: Lake terraces  
 Inclusion 1--Landform: Drainageways  
 Inclusion 2--Landform: Inset fans; position on slope: upper  
 Inclusion 3--Landform: Alluvial flats

#### *Major Component Description*

##### **Slaw Series**

*Elevation:* 3,800 to 4,100 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silt loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

##### **Trocken Series**

*Elevation:* 3,800 to 4,100 feet

*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Chuckles Series**

*Elevation:* 3,800 to 4,100 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Loam  
*Drainage class:* Moderately well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

#### ***Dominant Present Vegetation***

Slaw: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale  
 Trocken: Big saltbush, black greasewood, bottlebrush squirreltail, fourwing saltbush, shadscale  
 Chuckles: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale  
 Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 3: Alkali sacaton, black greasewood, inland saltgrass, shadscale

#### ***Ecological Site***

Slaw: 027XY041NV  
 Trocken: 027XY041NV  
 Chuckles: 027XY025NV  
 Inclusion 1: 027XY022NV  
 Inclusion 2: 027XY050NV  
 Inclusion 3: 027XY025NV

### **344--Slaw-Ragtown association**

#### ***Composition***

##### **Major Components**

Slaw silt loam, 0 to 2 percent slopes--65 percent  
 Ragtown fine sandy loam, 0 to 2 percent slopes--25 percent

##### **Contrasting Inclusions**

Inclusion 1: Mazuma loam, 0 to 2 percent slopes--8 percent  
 Inclusion 2: Rustigate silt loam, 0 to 2 percent slopes--2 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins  
 Slaw--Landform: Lake terraces  
 Ragtown--Landform: Lake terraces; position on slope: lower

Inclusion 1--Landform: Lake terraces; position on slope: upper  
 Inclusion 2--Landform: Lake plains; shape of slope: concave

#### ***Major Component Description***

##### **Slaw Series**

*Elevation:* 3,800 to 4,100 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silt loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

##### **Ragtown Series**

*Elevation:* 3,800 to 4,100 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Fine sandy loam  
*Drainage class:* Moderately well drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

#### ***Dominant Present Vegetation***

Slaw: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale  
 Ragtown: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed, shadscale  
 Inclusion 1: Indian ricegrass, black greasewood, bottlebrush squirreltail, seepweed, shadscale  
 Inclusion 2: Alkali sacaton, black greasewood, inland saltgrass, seepweed

#### ***Ecological Site***

Slaw: 027XY041NV  
 Ragtown: 027XY025NV  
 Inclusion 1: 027XY024NV  
 Inclusion 2: 027XY005NV

### **350--Ricert-Pineval association**

#### ***Composition***

##### **Major Components**

Ricert gravelly loam, 2 to 4 percent slopes--70 percent  
 Pineval gravelly loam, 4 to 8 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Typic Durargids, fine, montmorillonitic, mesic, 2 to 4 percent slopes--9 percent  
 Inclusion 2: Typic Nadurargids, fine, montmorillonitic, mesic, 2 to 4 percent slopes--6 percent

#### ***Map Unit Setting***

*Landscape position:* Fan piedmonts

Ricert--Landform: Fan remnants  
 Pineval--Landform: Fan remnants; position on slope: upper  
 Inclusion 1--Landform: Fan remnants; geomorphic position: summit  
 Inclusion 2--Landform: Fan remnants; position on slope: lower

### ***Major Component Description***

#### **Ricert Series**

*Elevation:* 5,400 to 5,900 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 20 percent gravel  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### **Pineval Series**

*Elevation:* 5,400 to 5,900 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

### ***Dominant Present Vegetation***

Ricert: Indian ricegrass, bottlebrush squirreltail, shadscale, winterfat  
 Pineval: Indian ricegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

### ***Ecological Site***

Ricert: 027XY013NV  
 Pineval: 027XY008NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY018NV

## **351--Ricert-Chilper-Pineval association**

### ***Composition***

#### **Major Components**

Ricert gravelly loam, 4 to 8 percent slopes--50 percent  
 Chilper gravelly very fine sandy loam, 4 to 8 percent slopes--20 percent  
 Pineval gravelly loam, 8 to 15 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Typic Nadurargids, fine, montmorillonitic, mesic, 4 to 15 percent slopes--6 percent

Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 8 percent slopes--5 percent  
 Inclusion 3: Nemico stony loam, 4 to 8 percent slopes--3 percent  
 Inclusion 4: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 15 percent slopes--1 percent

### ***Map Unit Setting***

*Landscape position:* Intermontane basins  
 Ricert--Landform: Fan remnants  
 Chilper--Landform: Fan remnants; geomorphic position: summit  
 Pineval--Landform: Fan remnants; geomorphic position: backslope  
 Inclusion 1--Landform: Partial ballenas; position on slope: upper  
 Inclusion 2--Landform: Drainageways  
 Inclusion 3--Landform: Fan remnants; geomorphic position: shoulder  
 Inclusion 4--Landform: Alluvial fans

### ***Major Component Description***

#### **Ricert Series**

*Elevation:* 5,600 to 6,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### **Chilper Series**

*Elevation:* 5,600 to 6,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### **Pineval Series**

*Elevation:* 5,600 to 6,000 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Ricert: Indian ricegrass, bottlebrush squirreltail, shadscale, winterfat  
 Chilper: Bluegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Pineval: Wyoming big sagebrush, pine bluegrass  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny

hopsage

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

Inclusion 4: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

### ***Ecological Site***

Ricert: 027XY013NV

Chilper: 027XY013NV

Pineval: 027XY008NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY029NV

Inclusion 3: 027XY013NV

Inclusion 4: 027XY029NV

## **352--Ricert-Desatoya-Pineval association**

### ***Composition***

#### **Major Components**

Ricert very gravelly loam, 4 to 8 percent slopes--40 percent

Desatoya very gravelly loam, 4 to 15 percent slopes--30 percent

Pineval very cobbly loam, 4 to 8 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Typic Nadurargids, fine, montmorillonitic, mesic, 4 to 8 percent slopes--7 percent

Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic very gravelly loam, 4 to 8 percent slopes--4 percent

Inclusion 3: Nemico stony loam, 8 to 30 percent slopes--4 percent

### ***Map Unit Setting***

*Landscape position:* Fan piedmonts

Ricert--Landform: Fan remnants; geomorphic position: summit

Desatoya--Landform: Fan remnants; geomorphic position: summit; position on slope: upper; shape of slope: convex

Pineval--Landform: Fan remnants; geomorphic position: summit; position on slope: upper; shape of slope: plane

Inclusion 1--Landform: Fan remnants; position on slope: lower

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Fan remnants; geomorphic position: backslope

### ***Major Component Description***

#### **Ricert Series**

*Elevation:* 5,400 to 6,200 feet

*Precipitation:* About 7 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 110 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### **Desatoya Series**

*Elevation:* 5,400 to 6,200 feet

*Precipitation:* About 10 inches

*Air temperature:* About 47 degrees

*Frost-free season:* About 100 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### **Pineval Series**

*Elevation:* 5,400 to 6,200 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 110 days

*Texture:* Very cobbly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Ricert: Indian ricegrass, bottlebrush squirreltail, shadscale, winterfat

Desatoya: Sandberg bluegrass, black sagebrush, low sagebrush, pine bluegrass, shadscale

Pineval: Nevada ephedra, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

### ***Ecological Site***

Ricert: 027XY013NV

Desatoya: 027XY032NV

Pineval: 027XY008NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY029NV

Inclusion 3: 027XY013NV

## **353--Ricert-Trocken-Pineval association**

### ***Composition***

#### **Major Components**

Ricert gravelly loam, 4 to 8 percent slopes--45 percent

Trocken gravelly sandy loam, 4 to 8 percent slopes--30 percent

Pineval gravelly loam, 4 to 8 percent slopes--10 percent

#### **Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic, 4 to 8 percent slopes--5

percent  
 Inclusion 2: Nemico stony loam, 8 to 15 percent slopes--5 percent  
 Inclusion 3: Typic Nadurargids, fine, montmorillonitic, mesic, 2 to 4 percent slopes--5 percent

### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Ricert--Landform: Fan remnants; geomorphic position: summit  
 Trocken--Landform: Inset fans  
 Pineval--Landform: Fan remnants; geomorphic position: summit; position on slope: upper  
 Inclusion 1--Landform: Drainageways  
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope  
 Inclusion 3--Landform: Fan remnants; geomorphic position: summit; position on slope: lower

### ***Major Component Description***

#### ***Ricert Series***

*Elevation:* 5,200 to 6,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### ***Trocken Series***

*Elevation:* 5,200 to 6,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Pineval Series***

*Elevation:* 5,200 to 6,000 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Ricert: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Pineval: Indian ricegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage  
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

### ***Ecological Site***

Ricert: 027XY018NV  
 Trocken: 027XY050NV  
 Pineval: 027XY008NV  
 Inclusion 1: 027XY029NV  
 Inclusion 2: 027XY013NV  
 Inclusion 3: 027XY018NV

## **358--Ricert-Desatoya-Trocken association**

### ***Composition***

#### ***Major Components***

Ricert gravelly loam, 4 to 8 percent slopes--40 percent  
 Desatoya very gravelly loam, 4 to 15 percent slopes--30 percent  
 Trocken gravelly very fine sandy loam, 8 to 15 percent slopes--15 percent

#### ***Contrasting Inclusions***

Inclusion 1: Typic Nadurargids, fine, montmorillonitic, mesic, 4 to 8 percent slopes--9 percent  
 Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 8 percent slopes--6 percent

### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Ricert--Landform: Fan remnants; geomorphic position: summit  
 Desatoya--Landform: Fan remnants; geomorphic position: summit; position on slope: upper; shape of slope: convex  
 Trocken--Landform: Fan remnants; geomorphic position: backslope  
 Inclusion 1--Landform: Fan remnants; geomorphic position: summit; position on slope: lower  
 Inclusion 2--Landform: Drainageways

### ***Major Component Description***

#### ***Ricert Series***

*Elevation:* 5,400 to 6,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### ***Desatoya Series***

*Elevation:* 5,700 to 6,000 feet  
*Precipitation:* About 10 inches  
*Air temperature:* About 47 degrees

*Frost-free season:* About 100 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Trocken Series**

*Elevation:* 5,400 to 6,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Ricert: Indian ricegrass, bottlebrush squirreltail, shadscale, winterfat  
 Desatoya: Sandberg bluegrass, black sagebrush, low sagebrush, pine bluegrass, shadscale  
 Trocken: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Ricert: 027XY013NV  
 Desatoya: 027XY032NV  
 Trocken: 027XY013NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY029NV

### **359--Ricert-Celeton-Trocken association**

#### ***Composition***

##### **Major Components**

Ricert very gravelly loam, 4 to 8 percent slopes--40 percent  
 Celeton very gravelly loam, 15 to 30 percent slopes--25 percent  
 Trocken gravelly fine sandy loam, 8 to 15 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Mazuma silt loam, 0 to 4 percent slopes--6 percent  
 Inclusion 2: Bluewing very gravelly loamy sand, 4 to 8 percent slopes--5 percent  
 Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 8 percent slopes--4 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins  
 Ricert--Landform: Fan remnants; geomorphic position: summit  
 Celeton--Landform: Pediments; geomorphic position: backslope

Trocken--Landform: Fan remnants; geomorphic position: backslope  
 Inclusion 1--Landform: Alluvial flats  
 Inclusion 2--Landform: Drainageways; position on slope: lower  
 Inclusion 3--Landform: Dunes; position on slope: upper

#### ***Major Component Description***

##### **Ricert Series**

*Elevation:* 4,000 to 6,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

##### **Celeton Series**

*Elevation:* 4,000 to 6,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from diatomite

##### **Trocken Series**

*Elevation:* 4,000 to 6,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Ricert: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat  
 Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 1: Alkali sacaton, black greasewood, inland saltgrass, shadscale  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Ricert: 027XY018NV  
 Celeton: 027XY027NV  
 Trocken: 027XY050NV  
 Inclusion 1: 027XY025NV  
 Inclusion 2: 027XY022NV



Inclusion 3: 027XY029NV

### 360--Ricert-Trocken-Rebel association

#### *Composition*

##### **Major Components**

Ricert gravelly loam, 4 to 8 percent slopes--40 percent

Trocken gravelly very fine sandy loam, 8 to 15 percent slopes--25 percent

Rebel loam, 4 to 8 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Puett sandy loam, 15 to 30 percent slopes--6 percent

Inclusion 2: Nemico stony loam, 15 to 30 percent slopes--3 percent

Inclusion 3: Celeton very cobbly sandy loam, 15 to 30 percent slopes--6 percent

#### *Map Unit Setting*

*Landscape position:* Piedmont slopes

Ricert--Landform: Fan remnants; geomorphic position: summit

Trocken--Landform: Fan remnants; geomorphic position: backslope

Rebel--Landform: Inset fans

Inclusion 1--Landform: Pediments

Inclusion 2--Landform: Pediments; geomorphic position: backslope

Inclusion 3--Landform: Fan remnants; position on slope: lower

#### *Major Component Description*

##### **Ricert Series**

*Elevation:* 5,300 to 6,000 feet

*Precipitation:* About 7 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

##### **Trocken Series**

*Elevation:* 5,300 to 6,000 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

##### **Rebel Series**

*Elevation:* 5,300 to 6,000 feet

*Precipitation:* About 8 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### *Dominant Present Vegetation*

Ricert: Indian ricegrass, bottlebrush squirreltail, winterfat

Trocken: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

Inclusion 1: Desert needlegrass, littleleaf horsebrush, spiny hopsage

Inclusion 2: Thurber needlegrass, Indian ricegrass, Wyoming big sagebrush

Inclusion 3: Bailey greasewood, bud sagebrush, desert needlegrass, shadscale

#### *Ecological Site*

Ricert: 027XY013NV

Trocken: 027XY013NV

Rebel: 027XY008NV

Inclusion 1: 027XY048NV

Inclusion 2: 027XY007NV

Inclusion 3: 027XY027NV

### 370--Duco-Clanalpine-Jung association

#### *Composition*

##### **Major Components**

Duco stony loam, 15 to 30 percent slopes--45 percent

Clanlpine very gravelly loam, 30 to 50 percent slopes--25 percent

Jung very gravelly loam, 15 to 30 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--7 percent

Inclusion 2: Aridic Haploxerolls, loamy-skeletal, mixed, frigid, 2 to 8 percent slopes--5 percent

Inclusion 3: Old Camp very stony loam, 15 to 50 percent slopes--3 percent

#### *Map Unit Setting*

*Landscape position:* Mountains

Duco--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

Clanlpine--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave; aspect: north

Jung--Landform: Mountains; geomorphic position: summit; shape of slope: convex

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Stream terraces

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: concave

#### *Major Component Description*

##### **Duco Series**

*Elevation:* 6,000 to 7,000 feet

*Precipitation:* About 12 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 95 days

*Surface rock fragments:* 2 percent stones and boulders; 5 percent cobbles; 15 percent gravel

*Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Clanalpine Series**

*Elevation:* 6,000 to 7,000 feet

*Precipitation:* About 12 inches

*Air temperature:* About 42 degrees

*Frost-free season:* About 80 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Jung Series**

*Elevation:* 6,000 to 7,000 feet

*Precipitation:* About 10 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 95 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Duco: Utah juniper, Wyoming big sagebrush, antelope bitterbrush, bluebunch wheatgrass, singleleaf pinyon

Clanalpine: Idaho fescue, lupine, mountain big sagebrush, pine bluegrass, singleleaf pinyon, snowberry

Jung: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Inclusion 1: None

Inclusion 2: Anderson peachbrush, basin big sagebrush, basin wildrye, western wheatgrass

Inclusion 3: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

#### ***Ecological Site***

Duco: 027XY081NV

Clanalpine: 027XY080NV

Jung: 027XY032NV

Inclusion 1: none

Inclusion 2: 027XY003NV

Inclusion 3: 027XY007NV

### **371--Duco-Clanalpine-Old Camp association**

#### ***Composition***

##### **Major Components**

Duco stony loam, 15 to 30 percent slopes--40 percent

Clanalpine very gravelly loam, 30 to 50 percent slopes--30 percent

Old Camp very stony loam, 30 to 50 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--9 percent

Inclusion 2: Aridic Argixerolls, loamy-skeletal, mixed, frigid, 15 to 50 percent slopes--4 percent

Inclusion 3: Jung stony loam, 15 to 30 percent slopes--2 percent

#### ***Map Unit Setting***

*Landscape position:* Mountains

Duco--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

Clanalpine--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave; aspect: north

Old Camp--Landform: Mountains; geomorphic position: backslope; aspect: south

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

Inclusion 3--Landform: Mountains; geomorphic position: shoulder; shape of slope: convex

#### ***Major Component Description***

##### **Duco Series**

*Elevation:* 5,000 to 7,000 feet

*Precipitation:* About 11 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 95 days

*Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Clanalpine Series**

*Elevation:* 5,600 to 7,000 feet

*Precipitation:* About 12 inches

*Air temperature:* About 42 degrees

*Frost-free season:* About 80 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Old Camp Series**

*Elevation:* 5,000 to 7,000 feet

*Precipitation:* About 10 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 100 days

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Duco: Utah juniper, Wyoming big sagebrush, antelope bitterbrush, bluebunch wheatgrass, singleleaf pinyon

Clanalpine: Idaho fescue, lupine, mountain big sagebrush, pine bluegrass, singleleaf pinyon, snowberry

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 1: None

Inclusion 2: Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass  
 Inclusion 3: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

### ***Ecological Site***

Duco: 027XY081NV  
 Clanalpine: 027XY080NV  
 Old Camp: 027XY007NV  
 Inclusion 1: none  
 Inclusion 2: 027XY054NV  
 Inclusion 3: 027XY032NV

## **373--Duco-Itca-Puett association**

### ***Composition***

#### **Major Components**

Duco stony loam, 15 to 50 percent slopes--35 percent  
 Itca stony loam, 30 to 50 percent slopes--30 percent  
 Puett fine sandy loam, 15 to 30 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Badland--9 percent  
 Inclusion 2: Jung very gravelly loam, 15 to 30 percent slopes--4 percent  
 Inclusion 3: Ravenswood stony loam, 15 to 50 percent slopes--2 percent

### ***Map Unit Setting***

#### ***Landscape position:*** Mountains

Duco--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Itca--Landform: Mountains; geomorphic position: backslope; aspect: north

Puett--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: shoulder; position on slope: lower; shape of slope: convex

Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

### ***Major Component Description***

#### **Duco Series**

*Elevation:* 6,000 to 7,100 feet  
*Precipitation:* About 11 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 95 days  
*Texture:* Stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Itca Series**

*Elevation:* 6,000 to 7,100 feet

*Precipitation:* About 12 inches  
*Air temperature:* About 45 degrees  
*Frost-free season:* About 80 days  
*Texture:* Stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### **Puett Series**

*Elevation:* 6,000 to 7,100 feet  
*Precipitation:* About 10 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from tuffaceous rocks

### ***Dominant Present Vegetation***

Duco: Utah juniper, Wyoming big sagebrush, antelope bitterbrush, bluebunch wheatgrass, singleleaf pinyon  
 Itca: Idaho fescue, Utah juniper, bitterbrush, mountain big sagebrush, serviceberry, singleleaf pinyon  
 Puett: Indian ricegrass, Sandberg bluegrass, black sagebrush, needleandthread, shadscale  
 Inclusion 1: None  
 Inclusion 2: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale  
 Inclusion 3: Indian ricegrass, Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon

### ***Ecological Site***

Duco: 027XY081NV  
 Itca: 027XY080NV  
 Puett: 028BY016NV  
 Inclusion 1: none  
 Inclusion 2: 027XY032NV  
 Inclusion 3: 027XY081NV

## **380--Itca-Clanlaine-Rock outcrop association**

### ***Composition***

#### **Major Components**

Itca stony loam, 30 to 50 percent slopes--35 percent  
 Clanlaine very gravelly loam, 50 to 75 percent slopes--35 percent  
 Rock outcrop--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Cleavage cobbly loam, 30 to 50 percent slopes--7 percent  
 Inclusion 2: Jung very gravelly loam, 15 to 30 percent slopes--5 percent  
 Inclusion 3: Aridic Argixerolls, loamy-skeletal, mixed, mesic, 8 to 30 percent slopes--3 percent

**Map Unit Setting**

*Landscape position:* Mountains

*Itca--Landform:* Mountains; geomorphic position: backslope; shape of slope: convex

*Clanalpine--Landform:* Mountains; geomorphic position: backslope; shape of slope: concave

*Rock outcrop--Landform:* Mountains

*Inclusion 1--Landform:* Drainageways; geomorphic position: summit

*Inclusion 2--Landform:* Mountains; geomorphic position: summit; position on slope: lower; shape of slope: convex

*Inclusion 3--Landform:* Mountains; geomorphic position: backslope; aspect: south

**Major Component Description****Itca Series**

*Elevation:* 7,000 to 8,500 feet

*Precipitation:* About 14 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 80 days

*Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

**Clanalpine Series**

*Elevation:* 7,000 to 8,500 feet

*Precipitation:* About 15 inches

*Air temperature:* About 42 degrees

*Frost-free season:* About 80 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Rock outcrop Miscellaneous Area**

*Elevation:* 7,000 to 8,500 feet

**Dominant Present Vegetation**

*Itca:* Thurber needlegrass, Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon

*Clanalpine:* Curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon, snowberry

*Rock outcrop:* None

*Inclusion 1:* Idaho fescue, Sandberg bluegrass, Webber ricegrass, bottlebrush squirreltail, low sagebrush

*Inclusion 2:* Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

*Inclusion 3:* Douglas rabbitbrush, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush

**Ecological Site**

*Itca:* 028BY062NV

*Clanalpine:* 028BY058NV

*Rock outcrop:* None

*Inclusion 1:* 024XY016NV

*Inclusion 2:* 027XY032NV

*Inclusion 3:* 027XY054NV

**381--Itca-Reluctan-Walti association****Composition****Major Components**

*Itca* very stony loam, 30 to 50 percent slopes--45 percent

*Reluctan* very gravelly loam, 15 to 50 percent slopes--25 percent

*Walti* very cobbly loam, 8 to 30 percent slopes--15 percent

**Contrasting Inclusions**

*Inclusion 1:* Aquic Haploxerolls, loamy-skeletal, mixed, mesic, 2 to 8 percent slopes--4 percent

*Inclusion 2:* Roca very gravelly loam, 15 to 50 percent slopes--4 percent

*Inclusion 3:* Xeric Torriorthents, sandy-skeletal, mixed, frigid, 4 to 15 percent slopes--4 percent

*Inclusion 4:* Rock outcrop--3 percent

**Map Unit Setting**

*Landscape position:* Mountains

*Itca--Landform:* Mountains; geomorphic position: backslope; aspect: north

*Reluctan--Landform:* Mountains; geomorphic position: backslope; shape of slope: concave

*Walti--Landform:* Mountains; geomorphic position: summit; shape of slope: convex

*Inclusion 1--Landform:* Mountains; geomorphic position: footslope

*Inclusion 2--Landform:* Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

*Inclusion 3--Landform:* Drainageways

*Inclusion 4--Landform:* Mountains

**Major Component Description****Itca Series**

*Elevation:* 6,000 to 7,600 feet

*Precipitation:* About 14 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 80 days

*Surface rock fragments:* 10 percent cobbles; 15 percent gravel

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

**Reluctan Series**

*Elevation:* 6,400 to 8,100 feet

*Precipitation:* About 13 inches

*Air temperature:* About 44 degrees

*Frost-free season:* About 80 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Walti Series**

*Elevation:* 7,000 to 8,300 feet

*Precipitation:* About 13 inches

*Air temperature:* About 45 degrees

*Frost-free season:* About 80 days

*Texture:* Very cobbly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Itca: Thurber needlegrass, Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon  
 Reluctan: Idaho fescue, Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush, pine bluegrass  
 Walti: Sandberg bluegrass, Thurber needlegrass, low sagebrush, pine bluegrass  
 Inclusion 1: Idaho fescue, Nevada bluegrass, rush, sedge, tufted hairgrass  
 Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass  
 Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 4: None

#### ***Ecological Site***

Itca: 028BY062NV  
 Reluctan: 024XY021NV  
 Walti: 027XY046NV  
 Inclusion 1: 027XY004NV  
 Inclusion 2: 024XY028NV  
 Inclusion 3: 027XY003NV  
 Inclusion 4: none

### **390--Defler-Pineval association**

#### ***Composition***

##### **Major Components**

Defler gravelly fine sandy loam, 2 to 4 percent slopes--50 percent  
 Pineval gravelly loam, 4 to 8 percent slopes--35 percent

##### **Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic, 2 to 4 percent slopes--7 percent  
 Inclusion 2: Trocken gravelly loam, 2 to 4 percent slopes--4 percent  
 Inclusion 3: Wholan silt loam, 2 to 4 percent slopes--4 percent

#### ***Map Unit Setting***

*Landscape position:* Piedmont slopes  
 Defler--Landform: Inset fans  
 Pineval--Landform: Fan remnants  
 Inclusion 1--Landform: Drainageways  
 Inclusion 2--Landform: Inset fans; position on slope: upper  
 Inclusion 3--Landform: Fan skirts

#### ***Major Component Description***

##### **Defler Series**

*Elevation:* 5,200 to 5,400 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 47 degrees  
*Frost-free season:* About 90 days  
*Texture:* Gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

##### **Pineval Series**

*Elevation:* 5,200 to 5,400 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Defler: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, winterfat  
 Pineval: Indian ricegrass, Wyoming big sagebrush, pine bluegrass  
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat  
 Inclusion 3: Indian ricegrass, bud sagebrush, fourwing saltbush, winterfat

#### ***Ecological Site***

Defler: 027XY014NV  
 Pineval: 027XY008NV  
 Inclusion 1: 027XY008NV  
 Inclusion 2: 027XY013NV  
 Inclusion 3: 027XY014NV

### **391--Defler-Trocken association**

#### ***Composition***

##### **Major Components**

Defler gravelly fine sandy loam, 2 to 4 percent slopes--45 percent  
 Trocken gravelly very fine sandy loam, 2 to 4 percent slopes--40 percent

##### **Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 4 percent slopes--6 percent  
 Inclusion 2: Hessian loam, 2 to 4 percent slopes--5 percent  
 Inclusion 3: Chuckles loam, 2 to 4 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Intermontane basins

Defler--Landform: Inset fans

Trocken--Landform: Fan skirts; position on slope: upper

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Fan skirts

Inclusion 3--Landform: Lake terraces

**Major Component Description****Defler Series***Elevation:* 5,000 to 5,400 feet*Precipitation:* About 8 inches*Air temperature:* About 47 degrees*Frost-free season:* About 90 days*Texture:* Gravelly fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Trocken Series***Elevation:* 5,000 to 5,400 feet*Precipitation:* About 7 inches*Air temperature:* About 50 degrees*Frost-free season:* About 100 days*Texture:* Gravelly very fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Dominant Present Vegetation**

Defler: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, winterfat

Trocken: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 2: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, shadscale

Inclusion 3: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

**Ecological Site**

Defler: 027XY014NV

Trocken: 027XY013NV

Inclusion 1: 027XY029NV

Inclusion 2: 027XY018NV

Inclusion 3: 027XY025NV

**400--Chuckles-Playas complex****Composition****Major Components**

Chuckles loam, 0 to 2 percent slopes--65 percent

Playas silty clay loam, 0 to 1 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Slaw silty clay loam, 0 to 2 percent slopes--7 percent

Inclusion 2: Mazuma loam, 0 to 2 percent slopes--4 percent

Inclusion 3: Xerollic Camborthids, fine-loamy, mixed, mesic, 4 to 15 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Bolsons

Chuckles--Landform: Lake terraces

Playas--Landform: Playas; position on slope: lower

Inclusion 1--Landform: Lake plains; shape of slope: concave

Inclusion 2--Landform: Alluvial flats

Inclusion 3--Landform: Parna dunes

**Major Component Description****Chuckles Series***Elevation:* 5,100 to 5,200 feet*Precipitation:* About 6 inches*Air temperature:* About 49 degrees*Frost-free season:* About 110 days*Texture:* Loam*Drainage class:* Moderately well drained*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments**Playas Miscellaneous Area***Elevation:* 5,100 to 5,200 feet*Texture:* Silty clay loam**Dominant Present Vegetation**

Chuckles: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, shadscale

Playas: None

Inclusion 1: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale

Inclusion 2: Alkali sacaton, black greasewood, inland saltgrass, shadscale

Inclusion 3: Indian ricegrass, Nevada ephedra, fourwing saltbush, needleandthread

**Ecological Site**

Chuckles: 027XY024NV

Playas: None

Inclusion 1: 027XY041NV

Inclusion 2: 027XY025NV

Inclusion 3: 027XY053NV

**401--Chuckles-Bango association****Composition****Major Components**Chuckles loam, 0 to 2 percent slopes--65 percent  
Bango loamy sand, 0 to 2 percent slopes--20 percent**Contrasting Inclusions**

Inclusion 1: Bluewing gravelly loamy sand, 2 to 4 percent slopes--6 percent

Inclusion 2: Trocken very cobbly loam, 4 to 8 percent slopes--5 percent

Inclusion 3: Bluewing gravelly loamy sand, 2 to 4 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Bolsons

Chuckles--Landform: Lake terraces

Bango--Landform: Lake terraces; position on slope: upper

Inclusion 1--Landform: Fan skirts

Inclusion 2--Landform: Spits

Inclusion 3--Landform: Drainageways

**Major Component Description****Chuckles Series***Elevation:* 3,800 to 4,000 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 120 days*Texture:* Loam*Drainage class:* Moderately well drained*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments**Bango Series***Elevation:* 3,900 to 4,000 feet*Precipitation:* About 5 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Loamy sand*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments**Dominant Present Vegetation**

Chuckles: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, shadscale

Bango: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 2: Indian ricegrass, black greasewood, bottlebrush squirreltail, seepweed, shadscale

Inclusion 3: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

**Ecological Site**

Chuckles: 027XY024NV

Bango: 027XY018NV

Inclusion 1: 027XY022NV

Inclusion 2: 027XY025NV

Inclusion 3: 027XY050NV

**402--Chuckles-Playas-Slaw association****Composition****Major Components**

Chuckles loam, 0 to 2 percent slopes--35 percent

Playas silty clay loam, 0 to 1 percent slopes--30 percent

Slaw silt loam, 0 to 2 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Settlement silty clay loam, 0 to 2 percent slopes--6 percent

Inclusion 2: Mazuma silt loam, 0 to 4 percent slopes--5 percent

Inclusion 3: Louderback sand, 0 to 2 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Bolsons

Chuckles--Landform: Lake terraces

Playas--Landform: Playas; shape of slope: concave

Slaw--Landform: Lake terraces; position on slope: upper

Inclusion 1--Landform: Lake terraces; position on slope: lower

Inclusion 2--Landform: Alluvial flats

Inclusion 3--Landform: Lake terraces; position on slope: lower

**Major Component Description****Chuckles Series***Elevation:* 3,800 to 4,000 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 120 days*Texture:* Loam*Drainage class:* Moderately well drained*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments**Playas Miscellaneous Area***Elevation:* 3,800 to 4,000 feet*Texture:* Silty clay loam**Slaw Series***Elevation:* 3,800 to 4,000 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Silt loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments**Dominant Present Vegetation**

Chuckles: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, shadscale

Playas: None

Slaw: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale

Inclusion 1: Alkali sacaton, basin wildrye, big sagebrush, inland saltgrass, shadscale

Inclusion 2: Alkali sacaton, black greasewood, inland saltgrass, shadscale

Inclusion 3: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed

**Ecological Site**

Chuckles: 027XY024NV

Slaw: 027XY041NV

Playas: None

Inclusion 1: 027XY006NV

Inclusion 2: 027XY025NV

Inclusion 3: 027XY005NV

**404--Chuckles-Settlement-Rebel association****Composition****Major Components**

Chuckles loam, 0 to 2 percent slopes--45 percent  
Settlement silty clay, 0 to 2 percent slopes--25 percent

Rebel loam, 0 to 2 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Slaw sandy loam, 0 to 2 percent slopes--6 percent

Inclusion 2: Hessian loam, 0 to 4 percent slopes--5 percent

Inclusion 3: Rustigate silt loam, 0 to 2 percent slopes--4 percent

**Map Unit Setting**

*Landscape position:* Intermontane basins

Chuckles--Landform: Lake terraces

Settlement--Landform: Lake terraces; position on slope: lower

Rebel--Landform: Inset fans

Inclusion 1--Landform: Lake terraces; position on slope: lower

Inclusion 2--Landform: Lake terraces; position on slope: upper

Inclusion 3--Landform: Lake terraces; position on slope: lower

**Major Component Description****Chuckles Series**

*Elevation:* 5,100 to 5,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Loam

*Drainage class:* Moderately well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Settlement Series**

*Elevation:* 5,100 to 5,300 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Silty clay

*Drainage class:* Poorly drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Rebel Series**

*Elevation:* 5,100 to 5,300 feet

*Precipitation:* About 8 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Dominant Present Vegetation**

Chuckles: Indian ricegrass, black greasewood,

bottlebrush squirreltail, bud sagebrush, shadscale  
Settlement: Alkali sacaton, basin wildrye, big sagebrush, inland saltgrass, shadscale

Rebel: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Inclusion 1: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale

Inclusion 2: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, shadscale

Inclusion 3: Alkali sacaton, black greasewood, inland saltgrass, seepweed

**Ecological Site**

Chuckles: 027XY024NV

Settlement: 027XY006NV

Rebel: 027XY008NV

Inclusion 1: 027XY041NV

Inclusion 2: 027XY018NV

Inclusion 3: 027XY005NV

**410--Buffaran-Desatoya association****Composition****Major Components**

Buffaran gravelly loam, 4 to 8 percent slopes--55 percent

Desatoya very gravelly loam, 8 to 15 percent slopes--30 percent

**Contrasting Inclusions**

Inclusion 1: Aridic Argixerolls, fine-loamy, mixed, mesic, 4 to 8 percent slopes--6 percent

Inclusion 2: Jung very gravelly loam, 15 to 30 percent slopes--5 percent

Inclusion 3: Puett loam, 8 to 30 percent slopes--4 percent

**Map Unit Setting**

*Landscape position:* Hills and intermontane basins

Buffaran--Landform: Fan remnants; geomorphic position: summit

Desatoya--Landform: Fan remnants; geomorphic position: backslope; shape of slope: convex

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Hills; geomorphic position: backslope; shape of slope: convex

Inclusion 3--Landform: Pediments; geomorphic position: backslope

**Major Component Description****Buffaran Series**

*Elevation:* 6,300 to 6,700 feet

*Precipitation:* About 9 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 100 days

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks



**Desatoya Series***Elevation:* 6,300 to 6,700 feet*Precipitation:* About 10 inches*Air temperature:* About 47 degrees*Frost-free season:* About 100 days*Texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks***Dominant Present Vegetation***

Buffaran: Indian ricegrass, Thurber needlegrass,  
Wyoming big sagebrush, pine bluegrass, spiny  
hopsage

Desatoya: Sandberg bluegrass, black sagebrush, low  
sagebrush, pine bluegrass, shadscale

Inclusion 1: Indian ricegrass, Thurber needlegrass,  
Wyoming big sagebrush, pine bluegrass, spiny  
hopsage

Inclusion 2: Sandberg bluegrass, black sagebrush,  
bottlebrush squirreltail, pine bluegrass, shadscale

Inclusion 3: Anderson wolfberry, Nevada ephedra,  
desert needlegrass, littleleaf horsebrush, spiny  
hopsage

***Ecological Site***

Buffaran: 027XY008NV

Desatoya: 027XY032NV

Inclusion 1: 027XY008NV

Inclusion 2: 027XY032NV

Inclusion 3: 027XY048NV

**411--Buffaran-Rebel-Puett association*****Composition*****Major Components**

Buffaran gravelly loam, 4 to 8 percent slopes--35  
percent

Rebel loam, 4 to 8 percent slopes--35 percent

Puett fine sandy loam, 15 to 30 percent slopes--15  
percent

**Contrasting Inclusions**

Inclusion 1: Yody loamy fine sand, 2 to 8 percent  
slopes--6 percent

Inclusion 2: Wholan silt loam, 0 to 4 percent slopes--  
5 percent

Inclusion 3: Trocken very gravelly sandy loam, 8 to  
15 percent slopes--4 percent

***Map Unit Setting****Landscape position:* Fan piedmonts

Buffaran--Landform: Fan remnants; geomorphic  
position: summit

Rebel--Landform: Inset fans

Puett--Landform: Pediments; geomorphic position:  
backslope

Inclusion 1--Landform: Fan remnants; geomorphic  
position: summit; position on slope: lower

Inclusion 2--Landform: Inset fans; position on slope:  
lower

Inclusion 3--Landform: Fan remnants; geomorphic  
position: backslope; position on slope: lower;  
aspect: south

***Major Component Description*****Buffaran Series***Elevation:* 5,000 to 5,800 feet*Precipitation:* About 9 inches*Air temperature:* About 48 degrees*Frost-free season:* About 100 days*Texture:* Gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Rebel Series***Elevation:* 5,000 to 5,800 feet*Precipitation:* About 8 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Puett Series***Elevation:* 5,000 to 5,800 feet*Precipitation:* About 9 inches*Air temperature:* About 49 degrees*Frost-free season:* About 110 days*Texture:* Fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from tuffaceous rocks***Dominant Present Vegetation***

Buffaran: Indian ricegrass, Thurber needlegrass,  
Wyoming big sagebrush, pine bluegrass, spiny  
hopsage

Rebel: Indian ricegrass, Thurber needlegrass,  
Wyoming big sagebrush, pine bluegrass, spiny  
hopsage

Puett: Indian ricegrass, Sandberg bluegrass, black  
sagebrush, needleandthread, shadscale

Inclusion 1: Indian ricegrass, Sandberg bluegrass,  
Thurber needlegrass, Wyoming big sagebrush,  
spiny hopsage

Inclusion 2: Indian ricegrass, bud sagebrush,  
fourwing saltbush, winterfat

Inclusion 3: Bailey greasewood, Indian ricegrass,  
bud sagebrush, shadscale

***Ecological Site***

Buffaran: 027XY008NV

Rebel: 027XY008NV

Puett: 028BY016NV

Inclusion 1: 027XY045NV

Inclusion 2: 027XY014NV

Inclusion 3: 027XY050NV

**420--Troacken-Hessing-Dun Glen association*****Composition*****Major Components**

Trocken gravelly very fine sandy loam, 2 to 8 percent slopes--45 percent

Hessing silt loam, 2 to 4 percent slopes--25 percent

Dun Glen loam, 0 to 4 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 4 percent slopes--6 percent

Inclusion 2: Chuckles silt loam, 2 to 4 percent slopes--6 percent

Inclusion 3: Isolde sand, 4 to 8 percent slopes--3 percent

***Map Unit Setting***

*Landscape position:* Bolsons

Trocken--Landform: Longshore bars

Hessing--Landform: Lagoons

Dun Glen--Landform: Lake terraces

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Lake terraces; position on slope: lower

Inclusion 3--Landform: Dunes

***Major Component Description*****Trocken Series**

*Elevation:* 5,200 to 5,500 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Hessing Series**

*Elevation:* 5,200 to 5,500 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Silt loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

**Dun Glen Series**

*Elevation:* 5,200 to 5,500 feet

*Precipitation:* About 7 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 120 days

*Texture:* Loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

***Dominant Present Vegetation***

Trocken: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

Hessing: Indian ricegrass, bottlebrush squirreltail,

bud sagebrush, needleandthread, shadscale  
Dun Glen: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage, winterfat

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 2: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

Inclusion 3: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

***Ecological Site***

Trocken: 027XY013NV

Hessing: 027XY013NV

Dun Glen: 027XY013NV

Inclusion 1: 027XY029NV

Inclusion 2: 027XY025NV

Inclusion 3: 027XY023NV

**422--Troacken-Hessing-Pineval association*****Composition*****Major Components**

Trocken gravelly very fine sandy loam, 2 to 4 percent slopes--50 percent

Hessing silt loam, 2 to 4 percent slopes--20 percent

Pineval gravelly loam, 4 to 8 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Chuckles loam, 0 to 2 percent slopes--6 percent

Inclusion 2: Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic, 4 to 8 percent slopes--5 percent

Inclusion 3: Wholan silt loam, 2 to 4 percent slopes--4 percent

***Map Unit Setting***

*Landscape position:* Intermontane basins

Trocken--Landform: Fan skirts

Hessing--Landform: Inset fans

Pineval--Landform: Fan remnants

Inclusion 1--Landform: Lake plains

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Lagoons; position on slope: lower

***Major Component Description*****Trocken Series**

*Elevation:* 5,100 to 5,400 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Hessing Series***Elevation:* 5,100 to 5,400 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Silt loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Pineval Series***Elevation:* 5,100 to 5,400 feet*Precipitation:* About 9 inches*Air temperature:* About 49 degrees*Frost-free season:* About 110 days*Texture:* Gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from volcanic rocks***Dominant Present Vegetation***

Troocken: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

Hessing: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, shadscale

Pineval: Indian ricegrass, Wyoming big sagebrush, pine bluegrass

Inclusion 1: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 3: Indian ricegrass, bud sagebrush, fourwing saltbush, winterfat

***Ecological Site***

Troocken: 027XY013NV

Hessing: 027XY013NV

Pineval: 027XY008NV

Inclusion 1: 027XY025NV

Inclusion 2: 027XY029NV

Inclusion 3: 027XY014NV

**423--Troocken-Bluewing association*****Composition*****Major Components**

Troocken very gravelly sandy loam, 2 to 4 percent slopes--40 percent

Bluewing very gravelly loamy sand, 2 to 4 percent slopes--30 percent

Troocken very fine sandy loam, 0 to 2 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Bluewing very cobbly loamy sand, 4 to 8 percent slopes--6 percent

Inclusion 2: Chuckles loam, 0 to 2 percent slopes--6 percent

Inclusion 3: Ricert very gravelly loam, 4 to 8 percent slopes--3 percent

***Map Unit Setting****Landscape position:* Intermontane basins

Troocken--Landform: Beach terraces

Bluewing--Landform: Inset fans

Troocken--Landform: Beach terraces; position on slope: lower

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Lake terraces

Inclusion 3--Landform: Fan remnants

***Major Component Description*****Troocken Series***Elevation:* 3,800 to 4,000 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Bluewing Series***Elevation:* 3,800 to 4,000 feet*Precipitation:* About 7 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly loamy sand*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from mixed rocks**Troocken Series***Elevation:* 3,800 to 4,000 feet*Precipitation:* About 5 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Very fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks***Dominant Present Vegetation***

Troocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Bluewing: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Troocken: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, seepweed, shadscale

Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 2: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

***Ecological Site***

Troocken: 027XY050NV

Bluewing: 027XY050NV

Troocken: 027XY024NV

Inclusion 1: 027XY022NV

Inclusion 2: 027XY025NV

Inclusion 3: 027XY018NV

**425--Trocken-Hessing-Defler association****Composition****Major Components**

Trocken gravelly very fine sandy loam, 2 to 4 percent slopes--40 percent  
 Hessing silt loam, 2 to 4 percent slopes--25 percent  
 Defler gravelly fine sandy loam, 2 to 4 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Chuckles loam, 2 to 4 percent slopes--6 percent  
 Inclusion 2: Trocken very gravelly loam, 2 to 4 percent slopes--5 percent  
 Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Intermontane basins

Trocken--Landform: Longshore bars

Hessing--Landform: Lagoons

Defler--Landform: Longshore bars; position on slope: lower

Inclusion 1--Landform: Lake plains

Inclusion 2--Landform: Longshore bars; position on slope: lower

Inclusion 3--Landform: Drainageways

**Major Component Description****Trocken Series***Elevation:* 5,100 to 5,400 feet*Precipitation:* About 7 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Gravelly very fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Hessing Series***Elevation:* 5,100 to 5,400 feet*Precipitation:* About 8 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Silt loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Defler Series***Elevation:* 5,100 to 5,400 feet*Precipitation:* About 6 inches*Air temperature:* About 47 degrees*Frost-free season:* About 90 days*Texture:* Gravelly fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Dominant Present Vegetation**

Trocken: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

Hessing: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, shadscale

Defler: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, winterfat

Inclusion 1: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

Inclusion 2: Indian ricegrass, black greasewood, bottlebrush squirreltail, seepweed, shadscale

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

**Ecological Site**

Trocken: 027XY013NV

Hessing: 027XY013NV

Defler: 027XY014NV

Inclusion 1: 027XY025NV

Inclusion 2: 027XY025NV

Inclusion 3: 027XY029NV

**430--Kram-Attella-Rock outcrop association****Composition****Major Components**

Kram very gravelly very fine sandy loam, 15 to 50 percent slopes--40 percent

Attella very gravelly loam, 30 to 50 percent slopes--25 percent

Rock outcrop--20 percent

**Contrasting Inclusions**

Inclusion 1: Hooplite extremely gravelly fine sandy loam, 15 to 30 percent slopes--6 percent

Inclusion 2: Findout very gravelly loam, 15 to 30 percent slopes--5 percent

Inclusion 3: Lithic Xerollic Camborthids, loamy, mixed, frigid, 50 to 75 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Mountains

Kram--Landform: Mountains; geomorphic position: backslope; aspect: south

Attella--Landform: Mountains; geomorphic position: backslope; aspect: north

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains; geomorphic position: shoulder; position on slope: lower; shape of slope: convex

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: south

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper

**Major Component Description****Kram Series***Elevation:* 7,000 to 8,200 feet

*Precipitation:* About 11 inches  
*Air temperature:* About 47 degrees  
*Frost-free season:* About 95 days  
*Texture:* Very gravelly very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from limestone and dolomite

#### **Attella Series**

*Elevation:* 7,000 to 8,200 feet  
*Precipitation:* About 11 inches  
*Air temperature:* About 44 degrees  
*Frost-free season:* About 90 days  
*Surface rock fragments:* 5 percent stones and boulders; 50 percent gravel  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from quartzite and calcareous sedimentary rocks

#### **Rock outcrop Miscellaneous Area**

*Elevation:* 7,000 to 8,200 feet

#### **Dominant Present Vegetation**

Kram: Utah juniper, black sagebrush, bottlebrush squirreltail, green ephedra, singleleaf pinyon  
 Attella: Wyoming big sagebrush  
 Rock outcrop: None  
 Inclusion 1: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale  
 Inclusion 3: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

#### **Ecological Site**

Kram: 024XY051NV  
 Attella: 024XY045NV  
 Rock outcrop: None  
 Inclusion 1: 027XY032NV  
 Inclusion 2: 027XY017NV  
 Inclusion 3: 027XY007NV

### **432--Kram-Findout-Rock outcrop association**

#### **Composition**

##### **Major Components**

Kram very gravelly very fine sandy loam, 30 to 50 percent slopes--50 percent  
 Findout very gravelly loam, 15 to 30 percent slopes--20 percent  
 Rock outcrop--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Hooplite extremely cobbly fine sandy loam, 15 to 50 percent slopes--8 percent

Inclusion 2: Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 30 to 50 percent slopes--7 percent

#### **Map Unit Setting**

*Landscape position:* Mountains  
 Kram--Landform: Mountains; geomorphic position: backslope; aspect: north  
 Findout--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south  
 Rock outcrop--Landform: Mountains  
 Inclusion 1--Landform: Mountains; geomorphic position: shoulder; shape of slope: convex  
 Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

#### **Major Component Description**

##### **Kram Series**

*Elevation:* 5,000 to 6,200 feet  
*Precipitation:* About 10 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very gravelly very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from limestone and dolomite

##### **Findout Series**

*Elevation:* 5,000 to 6,200 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from limestone and dolomite

#### **Rock outcrop Miscellaneous Area**

*Elevation:* 5,000 to 6,200 feet

#### **Dominant Present Vegetation**

Kram: Utah juniper, black sagebrush, bottlebrush squirreltail, green ephedra, singleleaf pinyon  
 Findout: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale  
 Rock outcrop: None  
 Inclusion 1: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale  
 Inclusion 2: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

#### **Ecological Site**

Kram: 024XY051NV  
 Findout: 027XY017NV  
 Rock outcrop: None  
 Inclusion 1: 027XY032NV  
 Inclusion 2: 027XY007NV

### 433--Kram-Hopeka-Rock outcrop association

#### *Composition*

##### **Major Components**

Kram very gravelly very fine sandy loam, 30 to 50 percent slopes--35 percent  
 Hopeka very gravelly loam, 30 to 50 percent slopes--35 percent  
 Rock outcrop--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Hooplite extremely cobbly fine sandy loam, 15 to 50 percent slopes--6 percent  
 Inclusion 2: Xerollic Camborthids, loamy-skeletal, mixed, frigid, 30 to 50 percent slopes--5 percent  
 Inclusion 3: Fluventic Haploxerolls, loamy-skeletal, mixed, frigid, 2 to 8 percent slopes--4 percent

#### *Map Unit Setting*

*Landscape position:* Mountains

Kram--Landform: Mountains; geomorphic position: backslope; aspect: south

Hopeka--Landform: Mountains; geomorphic position: backslope; aspect: north

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: convex

Inclusion 2--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Inclusion 3--Landform: Drainageways

#### *Major Component Description*

##### **Kram Series**

*Elevation:* 6,500 to 7,500 feet

*Precipitation:* About 12 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 100 days

*Surface rock fragments:* 5 percent cobbles; 50 percent gravel

*Texture:* Very gravelly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from limestone and dolomite

##### **Hopeka Series**

*Elevation:* 6,500 to 7,500 feet

*Precipitation:* About 12 inches

*Air temperature:* About 45 degrees

*Frost-free season:* About 90 days

*Surface rock fragments:* 5 percent cobbles; 50 percent gravel

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from limestone and dolomite

##### **Rock outcrop Miscellaneous Area**

*Elevation:* 6,500 to 7,500 feet

#### *Dominant Present Vegetation*

Kram: Utah juniper, black sagebrush, bottlebrush squirreltail, green ephedra, singleleaf pinyon

Hopeka: Thurber needlegrass, antelope bitterbrush, black sagebrush, bluebunch wheatgrass, bluegrass

Rock outcrop: None

Inclusion 1: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Inclusion 2: Utah juniper, black sagebrush, bottlebrush squirreltail, green ephedra, singleleaf pinyon

Inclusion 3: Anderson peachbrush, basin big sagebrush, basin wildrye, western wheatgrass

#### *Ecological Site*

Kram: 024XY051NV

Hopeka: 028BY060NV

Rock outcrop: None

Inclusion 1: 027XY032NV

Inclusion 2: 024XY051NV

Inclusion 3: 027XY003NV

### 440--Ravenswood-Itca-Walti association

#### *Composition*

##### **Major Components**

Ravenswood stony loam, 15 to 50 percent slopes--50 percent

Itca stony loam, 15 to 50 percent slopes--20 percent

Walti cobbly loam, 8 to 15 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--8 percent

Inclusion 2: Cleavage very gravelly loam, 8 to 30 percent slopes--4 percent

Inclusion 3: Jung very gravelly loam, 15 to 30 percent slopes--3 percent

#### *Map Unit Setting*

*Landscape position:* Mountains

Ravenswood--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Itca--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Walti--Landform: Mountains; geomorphic position: summit; shape of slope: convex

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: summit

Inclusion 3--Landform: Mountains; geomorphic position: shoulder; position on slope: lower; shape of slope: convex

#### *Major Component Description*

##### **Ravenswood Series**

*Elevation:* 7,400 to 8,000 feet

*Precipitation:* About 15 inches

*Air temperature:* About 45 degrees  
*Frost-free season:* About 80 days  
*Surface rock fragments:* 2 percent stones and boulders; 5 percent cobbles; 10 percent gravel  
*Texture:* Stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### **Itca Series**

*Elevation:* 7,400 to 8,000 feet  
*Precipitation:* About 16 inches  
*Air temperature:* About 43 degrees  
*Frost-free season:* About 80 days  
*Texture:* Stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### **Walti Series**

*Elevation:* 7,400 to 8,000 feet  
*Precipitation:* About 15 inches  
*Air temperature:* About 45 degrees  
*Frost-free season:* About 80 days  
*Texture:* Cobbly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### ***Dominant Present Vegetation***

Ravenswood: Bluebunch wheatgrass, curlleaf mountainmahogany, mountain big sagebrush, singleleaf pinyon, snowberry  
 Itca: Idaho fescue, bluebunch wheatgrass, curlleaf mountainmahogany, singleleaf pinyon  
 Walti: Idaho fescue, Sandberg bluegrass, Thurber needlegrass, bluebunch wheatgrass, low sagebrush  
 Inclusion 1: None  
 Inclusion 2: Idaho fescue, Sandberg bluegrass, Webber ricegrass, bottlebrush squirreltail, low sagebrush  
 Inclusion 3: Thurber needlegrass, Webber ricegrass, bluebunch wheatgrass, low sagebrush

#### ***Ecological Site***

Ravenswood: 025XY061NV  
 Itca: 025XY061NV  
 Walti: 024XY027NV  
 Inclusion 1: none  
 Inclusion 2: 024XY016NV  
 Inclusion 3: 024XY018NV

### **450--Wholan-Defler association**

#### ***Composition***

##### **Major Components**

Wholan silt loam, 0 to 2 percent slopes--35 percent  
 Wholan silt loam, 0 to 2 percent slopes--25 percent  
 Defler gravelly fine sandy loam, 2 to 4 percent slopes--25 percent

#### **Contrasting Inclusions**

Inclusion 1: Hessing loam, 2 to 4 percent slopes--7 percent  
 Inclusion 2: Chuckles loam, 0 to 2 percent slopes--5 percent  
 Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 4 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins  
 Wholan--Landform: Fan skirts  
 Wholan--Landform: Fan skirts; position on slope: lower  
 Defler--Landform: Inset fans  
 Inclusion 1--Landform: Barrier beaches  
 Inclusion 2--Landform: Lake plains  
 Inclusion 3--Landform: Drainageways

#### ***Major Component Description***

##### **Wholan Series**

*Elevation:* 5,100 to 5,400 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 110 days  
*Texture:* Silt loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

##### **Wholan Series**

*Elevation:* 5,100 to 5,400 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Silt loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

##### **Defler Series**

*Elevation:* 5,100 to 5,400 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 47 degrees  
*Frost-free season:* About 90 days  
*Texture:* Gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### ***Dominant Present Vegetation***

Wholan: Indian ricegrass, bottlebrush squirreltail, winterfat  
 Wholan: Indian ricegrass, bud sagebrush, fourwing saltbush, saltbush, winterfat  
 Defler: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, winterfat  
 Inclusion 1: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, shadscale  
 Inclusion 2: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

### ***Ecological Site***

Wholan: 028BY013NV  
 Wholan: 027XY078NV  
 Defler: 028BY018NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY025NV  
 Inclusion 3: 027XY029NV

## **460--Juva-Wholan-Stumble association**

### ***Composition***

#### **Major Components**

Juva loam, 0 to 4 percent slopes--45 percent  
 Wholan silt loam, 0 to 2 percent slopes--25 percent  
 Stumble loamy sand, 0 to 4 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Bango sandy loam, 2 to 4 percent slopes--8 percent  
 Inclusion 2: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--4 percent  
 Inclusion 3: Slaw silty clay loam, 0 to 2 percent slopes--3 percent

### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Juva--Landform: Fan skirts

Wholan--Landform: Fan skirts; position on slope: lower

Stumble--Landform: Sand sheets

Inclusion 1--Landform: Lake terraces

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Drainageways; position on slope: lower

### ***Major Component Description***

#### **Juva Series**

*Elevation:* 3,900 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### **Wholan Series**

*Elevation:* 3,900 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Silt loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### **Stumble Series**

*Elevation:* 3,900 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 130 days

*Texture:* Loamy sand

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Juva: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Wholan: Indian ricegrass, bottlebrush squirreltail, winterfat

Stumble: Bailey greasewood, Indian ricegrass, fourwing saltbush, needleandthread

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 3: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale

### ***Ecological Site***

Juva: 027XY018NV

Wholan: 028BY013NV

Stumble: 027XY009NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY022NV

Inclusion 3: 027XY041NV

## **470--Hessing-Wholan-Dun Glen association**

### ***Composition***

#### **Major Components**

Hessing silt loam, 2 to 4 percent slopes--40 percent  
 Wholan silt loam, 0 to 2 percent slopes--30 percent  
 Dun Glen loam, 2 to 4 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Wholan sand, 0 to 2 percent slopes--7 percent

Inclusion 2: Chuckles loam, 2 to 4 percent slopes--4 percent

Inclusion 3: Pineval gravelly loam, 2 to 4 percent slopes--4 percent

### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Hessing--Landform: Fan skirts; position on slope: upper

Wholan--Landform: Fan skirts; position on slope: lower

Dun Glen--Landform: Fan skirts

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Lake plains

Inclusion 3--Landform: Fan remnants



**Major Component Description****Hessing Series***Elevation:* 5,100 to 5,400 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Silt loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Wholan Series***Elevation:* 5,100 to 5,400 feet*Precipitation:* About 8 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Silt loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Dun Glen Series***Elevation:* 5,100 to 5,400 feet*Precipitation:* About 7 inches*Air temperature:* About 49 degrees*Frost-free season:* About 120 days*Texture:* Loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Dominant Present Vegetation**

Hessing: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, shadscale

Wholan: Indian ricegrass, bottlebrush squirreltail, winterfat

Dun Glen: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage, winterfat

Inclusion 1: Indian ricegrass, bud sagebrush, needleandthread

Inclusion 2: Indian ricegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 3: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass

**Ecological Site**

Hessing: 027XY013NV

Wholan: 028BY013NV

Dun Glen: 027XY013NV

Inclusion 1: 027XY012NV

Inclusion 2: 027XY024NV

Inclusion 3: 027XY008NV

**471--Hessing-Dun Glen-Bango association****Composition****Major Components**

Hessing silt loam, 2 to 4 percent slopes--45 percent

Dun Glen loam, 2 to 4 percent slopes--25 percent

Bango sandy loam, 2 to 4 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Mazuma silt loam, 0 to 4 percent slopes--6 percent

Inclusion 2: Chuckles loam, 0 to 2 percent slopes--5 percent

Inclusion 3: Slaw silt loam, 0 to 4 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Intermontane basins

Hessing--Landform: Fan skirts

Dun Glen--Landform: Fan skirts; position on slope: upper

Bango--Landform: Lake plains

Inclusion 1--Landform: Fan skirts; position on slope: lower

Inclusion 2--Landform: Lake plains; position on slope: lower

Inclusion 3--Landform: Lake terraces; shape of slope: concave

**Major Component Description****Hessing Series***Elevation:* 3,600 to 4,000 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Silt loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Dun Glen Series***Elevation:* 3,600 to 4,000 feet*Precipitation:* About 7 inches*Air temperature:* About 49 degrees*Frost-free season:* About 120 days*Texture:* Loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Bango Series***Elevation:* 3,600 to 4,000 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 120 days*Texture:* Sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments**Dominant Present Vegetation**

Hessing: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, shadscale

Dun Glen: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage, winterfat

Bango: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Alkali sacaton, black greasewood, inland saltgrass, shadscale  
 Inclusion 2: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale  
 Inclusion 3: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale

### ***Ecological Site***

Hessing: 027XY013NV  
 Dun Glen: 027XY013NV  
 Bango: 027XY018NV  
 Inclusion 1: 027XY025NV  
 Inclusion 2: 027XY025NV  
 Inclusion 3: 027XY041NV

## **480--Yody-Bufferan-Pineval association**

### ***Composition***

#### **Major Components**

Yody gravelly sandy loam, 4 to 8 percent slopes--50 percent  
 Bufferan gravelly loam, 4 to 8 percent slopes--20 percent  
 Pineval gravelly loam, 4 to 8 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Rebel loam, 4 to 8 percent slopes--8 percent  
 Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 8 percent slopes--5 percent  
 Inclusion 3: Duric Natrargids, fine-loamy, mixed, mesic, 4 to 8 percent slopes--2 percent

### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Yody--Landform: Fan remnants; geomorphic position: summit  
 Bufferan--Landform: Fan remnants; geomorphic position: summit; position on slope: upper  
 Pineval--Landform: Fan remnants; geomorphic position: shoulder  
 Inclusion 1--Landform: Inset fans  
 Inclusion 2--Landform: Drainageways  
 Inclusion 3--Landform: Fan remnants; geomorphic position: summit; position on slope: lower

### ***Major Component Description***

#### **Yody Series**

*Elevation:* 5,200 to 6,200 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 15 percent gravel  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

#### **Bufferan Series**

*Elevation:* 5,200 to 6,200 feet

*Precipitation:* About 9 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 100 days  
*Surface rock fragments:* 30 percent gravel  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Pineval Series**

*Elevation:* 5,200 to 6,200 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Yody: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Bufferan: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage  
 Pineval: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass  
 Inclusion 1: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage  
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Bailey greasewood, bottlebrush squirreltail, bud sagebrush, shadscale

### ***Ecological Site***

Yody: 027XY008NV  
 Bufferan: 027XY008NV  
 Pineval: 027XY008NV  
 Inclusion 1: 027XY008NV  
 Inclusion 2: 027XY029NV  
 Inclusion 3: 027XY018NV

## **481--Yody-Ricert-Pineval association**

### ***Composition***

#### **Major Components**

Yody gravelly sandy loam, 4 to 8 percent slopes--35 percent  
 Ricert gravelly sandy loam, 4 to 8 percent slopes--30 percent  
 Pineval gravelly loam, 4 to 8 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 8 percent slopes--6 percent  
 Inclusion 2: Defler gravelly fine sandy loam, 2 to 4 percent slopes--5 percent  
 Inclusion 3: Bufferan cobbly loam, 4 to 8 percent slopes--4 percent

**Map Unit Setting**

*Landscape position:* Fan piedmonts  
*Yody--Landform:* Fan remnants; geomorphic position: summit; position on slope: upper  
*Ricert--Landform:* Fan remnants; geomorphic position: summit; position on slope: lower  
*Pineval--Landform:* Fan remnants; geomorphic position: shoulder  
*Inclusion 1--Landform:* Drainageways  
*Inclusion 2--Landform:* Inset fans; position on slope: lower  
*Inclusion 3--Landform:* Fan remnants; geomorphic position: summit; position on slope: upper

**Major Component Description****Yody Series**

*Elevation:* 5,300 to 5,800 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

**Ricert Series**

*Elevation:* 5,300 to 5,800 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

**Pineval Series**

*Elevation:* 5,300 to 5,800 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

**Dominant Present Vegetation**

*Yody:* Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
*Ricert:* Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, winterfat  
*Pineval:* Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass  
*Inclusion 1:* Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
*Inclusion 2:* Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, winterfat  
*Inclusion 3:* Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

**Ecological Site**

*Yody:* 027XY008NV  
*Ricert:* 027XY013NV  
*Pineval:* 027XY008NV  
*Inclusion 1:* 027XY029NV  
*Inclusion 2:* 027XY014NV  
*Inclusion 3:* 027XY008NV

**484--Yody-Pineval association****Composition****Major Components**

*Yody* gravelly sandy loam, 4 to 8 percent slopes--45 percent  
*Pineval* gravelly loam, 4 to 8 percent slopes--40 percent

**Contrasting Inclusions**

*Inclusion 1:* Buffaran stony loam, 4 to 8 percent slopes--5 percent  
*Inclusion 2:* Typic Nadurargids, fine, montmorillonitic, mesic, 4 to 8 percent slopes--5 percent  
*Inclusion 3:* Xeric Torriorthents, fine-loamy, mixed (calcareous), mesic, 4 to 8 percent slopes--5 percent

**Map Unit Setting**

*Landscape position:* Fan piedmonts  
*Yody--Landform:* Fan remnants; geomorphic position: summit  
*Pineval--Landform:* Fan remnants; geomorphic position: backslope  
*Inclusion 1--Landform:* Fan remnants; geomorphic position: summit; position on slope: upper  
*Inclusion 2--Landform:* Fan remnants; geomorphic position: summit; position on slope: lower  
*Inclusion 3--Landform:* Inset fans

**Major Component Description****Yody Series**

*Elevation:* 5,500 to 6,500 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

**Pineval Series**

*Elevation:* 5,500 to 6,500 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

***Dominant Present Vegetation***

Yody: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Pineval: Indian ricegrass, Wyoming big sagebrush, pine bluegrass

Inclusion 1: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

***Ecological Site***

Yody: 027XY008NV

Pineval: 027XY008NV

Inclusion 1: 027XY008NV

Inclusion 2: 027XY018NV

Inclusion 3: 027XY029NV

**491--Pineval-Rebel-Wholan association*****Composition*****Major Components**

Pineval gravelly loam, 4 to 8 percent slopes--40 percent

Rebel loam, 2 to 4 percent slopes--25 percent

Wholan very fine sandy loam, 2 to 4 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 4 percent slopes--9 percent

Inclusion 2: Hooplite very gravelly sandy loam, 8 to 15 percent slopes--3 percent

Inclusion 3: Old Camp stony loam, 8 to 15 percent slopes--3 percent

***Map Unit Setting***

*Landscape position:* Hills and intermontane basins

Pineval--Landform: Fan remnants; geomorphic

position: summit

Rebel--Landform: Inset fans

Wholan--Landform: Inset fans; position on slope: lower

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Hills

Inclusion 3--Landform: Hills; geomorphic position: backslope; aspect: north

***Major Component Description*****Pineval Series**

*Elevation:* 5,800 to 6,700 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 110 days

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

**Rebel Series**

*Elevation:* 5,800 to 6,700 feet

*Precipitation:* About 8 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Wholan Series**

*Elevation:* 5,800 to 6,700 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

***Dominant Present Vegetation***

Pineval: Indian ricegrass, Wyoming big sagebrush, bottlebrush squirreltail, pine bluegrass

Rebel: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Wholan: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, winterfat

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 2: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Inclusion 3: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

***Ecological Site***

Pineval: 027XY008NV

Rebel: 027XY008NV

Wholan: 027XY014NV

Inclusion 1: 027XY029NV

Inclusion 2: 027XY032NV

Inclusion 3: 027XY007NV

**492--Pineval-Rebel association*****Composition*****Major Components**

Pineval gravelly loam, 4 to 15 percent slopes--60 percent

Rebel loam, 2 to 8 percent slopes--25 percent

**Contrasting Inclusions**

Inclusion 1: Puett sandy loam, 15 to 30 percent slopes--9 percent

Inclusion 2: Old Camp very gravelly loam, 8 to 30 percent slopes--4 percent

Inclusion 3: Rock outcrop--2 percent

***Map Unit Setting***

*Landscape position:* Fan piedmonts

Pineval--Landform: Fan remnants  
 Rebel--Landform: Inset fans  
 Inclusion 1--Landform: Pediments; geomorphic position: backslope  
 Inclusion 2--Landform: Pediments; geomorphic position: backslope  
 Inclusion 3--Landform: Pediments

### ***Major Component Description***

#### **Pineval Series**

*Elevation:* 5,700 to 6,400 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 20 percent gravel  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Rebel Series**

*Elevation:* 5,700 to 6,400 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Pineval: Indian ricegrass, Wyoming big sagebrush, pine bluegrass  
 Rebel: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage  
 Inclusion 1: Anderson wolfberry, Nevada ephedra, desert needlegrass, littleleaf horsebrush, spiny hopsage  
 Inclusion 2: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Inclusion 3: None

### ***Ecological Site***

Pineval: 027XY008NV  
 Rebel: 027XY008NV  
 Inclusion 1: 027XY048NV  
 Inclusion 2: 027XY007NV  
 Inclusion 3: none

## **494--Pineval-Buckaroo-Rebel association**

### ***Composition***

#### **Major Components**

Pineval gravelly loam, 4 to 8 percent slopes--40 percent  
 Buckaroo extremely stony sandy loam, 4 to 8 percent slopes--30 percent  
 Rebel loam, 4 to 8 percent slopes--15 percent

### **Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 8 percent slopes--6 percent  
 Inclusion 2: Yody gravelly sandy loam, 4 to 8 percent slopes--5 percent  
 Inclusion 3: Typic Nadurargids, fine, montmorillonitic, mesic, 8 to 15 percent slopes--4 percent

### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Pineval--Landform: Fan remnants; geomorphic position: summit; position on slope: upper  
 Buckaroo--Landform: Fan remnants; geomorphic position: summit; position on slope: lower  
 Rebel--Landform: Inset fans  
 Inclusion 1--Landform: Drainageways  
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower  
 Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower

### ***Major Component Description***

#### **Pineval Series**

*Elevation:* 5,000 to 6,500 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Buckaroo Series**

*Elevation:* 5,000 to 6,500 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Extremely stony sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

#### **Rebel Series**

*Elevation:* 5,000 to 6,500 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Pineval: Indian ricegrass, Wyoming big sagebrush, pine bluegrass  
 Buckaroo: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Rebel: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

- Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### ***Ecological Site***

Pineval: 027XY008NV  
 Buckaroo: 027XY018NV  
 Rebel: 027XY008NV  
 Inclusion 1: 027XY029NV  
 Inclusion 2: 027XY008NV  
 Inclusion 3: 027XY018NV

### **500--Louderback-Rustigate-Isolde association**

#### ***Composition***

##### **Major Components**

Louderback sand, 0 to 2 percent slopes--40 percent  
 Rustigate silt loam, 0 to 2 percent slopes--25 percent

Isolde fine sand, 2 to 8 percent slopes--20 percent

##### **Contrasting Inclusions**

- Inclusion 1: Slaw silt loam, 0 to 2 percent slopes--7 percent  
 Inclusion 2: Chuckles silt loam, 0 to 2 percent slopes--5 percent  
 Inclusion 3: Bango sandy loam, 0 to 2 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Bolsons

Louderback--Landform: Lake terraces

Rustigate--Landform: Lake terraces; position on slope: lower

Isolde--Landform: Dunes

Inclusion 1--Landform: Lake plains; shape of slope: concave

Inclusion 2--Landform: Lake terraces; position on slope: upper

Inclusion 3--Landform: Lake terraces

#### ***Major Component Description***

##### **Louderback Series**

*Elevation:* 3,800 to 4,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Sand

*Drainage class:* Somewhat poorly drained

*Dominant parent material:* Alluvium derived from mixed rocks

##### **Rustigate Series**

*Elevation:* 3,800 to 4,000 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Silt loam

*Drainage class:* Somewhat poorly drained

*Dominant parent material:* Alluvium derived from mixed rocks

##### **Isolde Series**

*Elevation:* 3,800 to 4,000 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Fine sand

*Drainage class:* Excessively drained

*Dominant parent material:* Eolian sand

#### ***Dominant Present Vegetation***

Louderback: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed

Rustigate: Alkali sacaton, black greasewood, inland saltgrass, seepweed

Isolde: Indian ricegrass, black greasewood, fourwing saltbush, shadscale

Inclusion 1: Torrey quailbush, basin wildrye, black greasewood, fourwing saltbush, shadscale

Inclusion 2: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### ***Ecological Site***

Louderback: 027XY005NV

Rustigate: 027XY005NV

Isolde: 027XY016NV

Inclusion 1: 027XY041NV

Inclusion 2: 027XY025NV

Inclusion 3: 027XY018NV

### **511--Grumblen-Pickup association**

#### ***Composition***

##### **Major Components**

Grumblen very gravelly loam, 15 to 50 percent slopes--50 percent

Pickup very gravelly loam, 30 to 50 percent slopes--35 percent

##### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent

Inclusion 2: Old Camp very gravelly loam, 15 to 50 percent slopes--4 percent

Inclusion 3: Singatse very gravelly loam, 15 to 50 percent slopes--3 percent

Inclusion 4: Xeric Torriorthents, sandy-skeletal,

mixed, mesic, 4 to 8 percent slopes--2 percent

### **Map Unit Setting**

*Landscape position:* Mountains

Grumblen--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south

Pickup--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex

Inclusion 4--Landform: Drainageways

### **Major Component Description**

#### **Grumblen Series**

*Elevation:* 4,200 to 5,600 feet

*Precipitation:* About 9 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 10 percent cobbles; 45 percent gravel

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Pickup Series**

*Elevation:* 4,200 to 5,600 feet

*Precipitation:* About 9 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 15 percent cobbles; 35 percent gravel

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

### **Dominant Present Vegetation**

Grumblen: Sandberg bluegrass, Thurber needlegrass, spiny hopsage

Pickup: Sandberg bluegrass, desert needlegrass, spiny hopsage

Inclusion 1: None

Inclusion 2: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 3: Bailey greasewood, shadscale, winterfat

Inclusion 4: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

### **Ecological Site**

Grumblen: 027XY070NV

Pickup: 027XY020NV

Inclusion 1: none

Inclusion 2: 027XY007NV

Inclusion 3: 027XY027NV

Inclusion 4: 027XY029NV

## **520--Pineval-Bluewing-Inmo association**

### **Composition**

#### **Major Components**

Pineval very cobbly loam, 4 to 8 percent slopes--50 percent

Bluewing very gravelly loamy sand, 4 to 8 percent slopes--25 percent

Inmo gravelly loamy sand, 2 to 8 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 4 to 8 percent slopes--5 percent

Inclusion 2: Trocken very gravelly loam, 4 to 8 percent slopes--5 percent

### **Map Unit Setting**

*Landscape position:* Fan piedmonts

Pineval--Landform: Fan remnants; geomorphic position: summit

Bluewing--Landform: Drainageways

Inmo--Landform: Inset fans

Inclusion 1--Landform: Dunes; position on slope: upper

Inclusion 2--Landform: Beach terraces; position on slope: lower

### **Major Component Description**

#### **Pineval Series**

*Elevation:* 3,800 to 4,200 feet

*Precipitation:* About 8 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 110 days

*Texture:* Very cobbly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### **Bluewing Series**

*Elevation:* 3,800 to 4,200 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loamy sand

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### **Inmo Series**

*Elevation:* 3,800 to 4,200 feet

*Precipitation:* About 7 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly loamy sand

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from granitic rocks

### **Dominant Present Vegetation**

Pineval: Nevada ephedra, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Bluewing: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inmo: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale

#### ***Ecological Site***

Pineval: 027XY008NV  
 Bluewing: 027XY022NV  
 Inmo: 027XY013NV  
 Inclusion 1: 027XY029NV  
 Inclusion 2: 027XY018NV

### **530--Cleaver-Trocken-Bluewing association**

#### ***Composition***

##### **Major Components**

Cleaver gravelly loam, 2 to 4 percent slopes--55 percent  
 Trocken gravelly fine sandy loam, 4 to 15 percent slopes--15 percent  
 Bluewing very gravelly loamy sand, 2 to 4 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Duric Natrargids, fine-loamy, mixed, mesic, 4 to 8 percent slopes--8 percent  
 Inclusion 2: Typic Nadurargids, fine, montmorillonitic, mesic, 4 to 8 percent slopes--7 percent

#### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Cleaver--Landform: Fan remnants; geomorphic position: summit  
 Trocken--Landform: Fan remnants; geomorphic position: backslope  
 Bluewing--Landform: Drainageways  
 Inclusion 1--Landform: Fan remnants  
 Inclusion 2--Landform: Fan remnants; geomorphic position: summit; position on slope: upper

#### ***Major Component Description***

##### **Cleaver Series**

*Elevation:* 4,000 to 5,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

##### **Trocken Series**

*Elevation:* 4,000 to 5,200 feet  
*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

##### **Bluewing Series**

*Elevation:* 4,000 to 5,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly loamy sand  
*Drainage class:* Excessively drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Cleaver: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Bluewing: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### ***Ecological Site***

Cleaver: 027XY018NV  
 Trocken: 027XY050NV  
 Bluewing: 027XY022NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY018NV

### **532--Cleaver-Ricert-Barnmot association**

#### ***Composition***

##### **Major Components**

Cleaver gravelly loam, 2 to 4 percent slopes--35 percent  
 Ricert gravelly loam, 4 to 8 percent slopes--30 percent  
 Barnmot very gravelly clay, 15 to 30 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Celeton very cobbly sandy loam, 30 to 50 percent slopes--6 percent  
 Inclusion 2: Typic Nadurargids, fine, montmorillonitic, mesic, 2 to 8 percent slopes--6 percent  
 Inclusion 3: Bluewing very gravelly loamy sand, 2 to 8 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Hills and intermontane basins  
 Cleaver--Landform: Fan remnants  
 Ricert--Landform: Fan remnants; geomorphic



position: shoulder  
 Barnmot--Landform: Hills; geomorphic position:  
 backslope  
 Inclusion 1--Landform: Hills; geomorphic position:  
 backslope  
 Inclusion 2--Landform: Fan remnants; position on  
 slope: upper  
 Inclusion 3--Landform: Drainageways

### ***Major Component Description***

#### **Cleaver Series**

*Elevation:* 3,900 to 5,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from  
 volcanic rocks

#### **Ricert Series**

*Elevation:* 3,900 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from  
 mixed rocks, loess, and volcanic ash

#### **Barnmot Series**

*Elevation:* 3,900 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly clay  
*Drainage class:* Well drained  
*Dominant parent material:* Colluvium derived from  
 mixed rocks over lacustrine sediments

### ***Dominant Present Vegetation***

Cleaver: Bailey greasewood, Indian ricegrass,  
 bottlebrush squirreltail, bud sagebrush, shadscale  
 Ricert: Indian ricegrass  
 Barnmot: Bailey greasewood, Indian ricegrass, bud  
 sagebrush, desert needlegrass, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass,  
 bud sagebrush, desert needlegrass, shadscale,  
 winterfat  
 Inclusion 2: Bailey greasewood, Indian ricegrass,  
 bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 3: Indian ricegrass, burrobrush, littleleaf  
 horsebrush, rubber rabbitbrush, spiny hopsage

### ***Ecological Site***

Cleaver: 027XY018NV  
 Ricert: 027XY018NV  
 Barnmot: 027XY027NV  
 Inclusion 1: 027XY027NV  
 Inclusion 2: 027XY018NV  
 Inclusion 3: 027XY022NV

## **533--Cleaver-Bufferan association**

### ***Composition***

#### **Major Components**

Cleaver gravelly loam, 2 to 4 percent slopes--50  
 percent  
 Bufferan gravelly loam, 8 to 30 percent slopes--35  
 percent

#### **Contrasting Inclusions**

Inclusion 1: Haplic Nadurargids, loamy, mixed,  
 mesic, shallow, 4 to 30 percent slopes--8 percent  
 Inclusion 2: Ricert gravelly loam, 4 to 8 percent  
 slopes--4 percent  
 Inclusion 3: Pineval gravelly loam, 4 to 8 percent  
 slopes--3 percent

### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Cleaver--Landform: Fan remnants; geomorphic  
 position: summit  
 Bufferan--Landform: Fan remnants; geomorphic  
 position: backslope  
 Inclusion 1--Landform: Fan remnants; geomorphic  
 position: backslope; position on slope: lower  
 Inclusion 2--Landform: Fan remnants; geomorphic  
 position: summit; position on slope: lower  
 Inclusion 3--Landform: Fan remnants; position on  
 slope: lower

### ***Major Component Description***

#### **Cleaver Series**

*Elevation:* 5,200 to 6,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 100 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from  
 volcanic rocks

#### **Bufferan Series**

*Elevation:* 5,200 to 6,000 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 100 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from  
 mixed rocks

### ***Dominant Present Vegetation***

Cleaver: Bailey greasewood, Indian ricegrass,  
 bottlebrush squirreltail, bud sagebrush, shadscale  
 Bufferan: Indian ricegrass, Thurber needlegrass,  
 Wyoming big sagebrush, pine bluegrass, spiny  
 hopsage  
 Inclusion 1: Bailey greasewood, Indian ricegrass,  
 bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass,  
 bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 3: Thurber needlegrass, Wyoming big

sagebrush, pine bluegrass

### ***Ecological Site***

Cleaver: 027XY018NV  
 Buffaran: 027XY008NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY018NV  
 Inclusion 3: 027XY008NV

## **535--Cleaver-Bundorf association**

### ***Composition***

#### **Major Components**

Cleaver gravelly sandy loam, 2 to 8 percent slopes--50 percent  
 Bundorf very stony loam, 4 to 8 percent slopes--40 percent

#### **Contrasting Inclusions**

Inclusion 1: Trocken very gravelly loam, 15 to 30 percent slopes--6 percent  
 Inclusion 2: Typic Torriorthents, fine, montmorillonitic (calcareous), mesic, 0 to 4 percent slopes--4 percent

### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Cleaver--Landform: Fan remnants  
 Bundorf--Landform: Fan remnants; position on slope: upper  
 Inclusion 1--Landform: Fan remnants; geomorphic position: backslope  
 Inclusion 2--Landform: Inset fans; position on slope: lower

### ***Major Component Description***

#### **Cleaver Series**

*Elevation:* 4,400 to 5,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 100 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

#### **Bundorf Series**

*Elevation:* 4,400 to 5,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 100 days  
*Surface rock fragments:* 5 percent stones and boulders; 20 percent cobbles; 35 percent gravel  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Cleaver: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Bundorf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat  
 Inclusion 2: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

### ***Ecological Site***

Cleaver: 027XY018NV  
 Bundorf: 027XY018NV  
 Inclusion 1: 027XY013NV  
 Inclusion 2: 027XY018NV

## **536--Cleaver-Rednik association**

### ***Composition***

#### **Major Components**

Cleaver gravelly sandy loam, 4 to 15 percent slopes--50 percent  
 Rednik very gravelly sandy loam, 15 to 30 percent slopes--40 percent

#### **Contrasting Inclusions**

Inclusion 1: Trocken very gravelly sandy loam, 2 to 4 percent slopes--8 percent  
 Inclusion 2: Bluewing very gravelly sand, 2 to 4 percent slopes--2 percent

### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Cleaver--Landform: Fan remnants; geomorphic position: summit  
 Rednik--Landform: Fan remnants; geomorphic position: backslope  
 Inclusion 1--Landform: Inset fans  
 Inclusion 2--Landform: Drainageways

### ***Major Component Description***

#### **Cleaver Series**

*Elevation:* 4,000 to 4,700 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

#### **Rednik Series**

*Elevation:* 3,800 to 4,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Cleaver: Bailey greasewood, Indian ricegrass,

bottlebrush squirreltail, bud sagebrush, shadscale  
 Rednik: Bailey greasewood, Indian ricegrass,  
 bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, Sandberg bluegrass,  
 bud sagebrush, shadscale, winterfat  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf  
 horsebrush, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Cleaver: 027XY018NV  
 Rednik: 027XY018NV  
 Inclusion 1: 027XY013NV  
 Inclusion 2: 027XY022NV

### **537--Cleaver-Otomo association**

#### ***Composition***

##### **Major Components**

Cleaver gravelly sandy loam, 2 to 8 percent slopes--  
 45 percent  
 Otomo gravelly sandy loam, 4 to 15 percent slopes--  
 40 percent

##### **Contrasting Inclusions**

Inclusion 1: Trocken very gravelly loam, 15 to 30  
 percent slopes--9 percent  
 Inclusion 2: Trocken gravelly loam, 2 to 8 percent  
 slopes--6 percent

#### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Cleaver--Landform: Fan remnants; geomorphic  
 position: summit  
 Otomo--Landform: Fan remnants; geomorphic  
 position: backslope  
 Inclusion 1--Landform: Fan remnants; geomorphic  
 position: backslope  
 Inclusion 2--Landform: Inset fans

#### ***Major Component Description***

##### **Cleaver Series**

*Elevation:* 4,500 to 4,800 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from  
 volcanic rocks

##### **Otomo Series**

*Elevation:* 4,500 to 4,800 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 30 percent gravel  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from  
 mixed rocks

#### ***Dominant Present Vegetation***

Cleaver: Bailey greasewood, Indian ricegrass,  
 bottlebrush squirreltail, bud sagebrush, shadscale  
 Otomo: Bailey greasewood, Indian ricegrass,  
 bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, Sandberg bluegrass,  
 bud sagebrush, shadscale, winterfat  
 Inclusion 2: Bailey greasewood, Indian ricegrass,  
 Sandberg bluegrass, bottlebrush squirreltail,  
 shadscale

#### ***Ecological Site***

Cleaver: 027XY018NV  
 Otomo: 027XY018NV  
 Inclusion 1: 027XY013NV  
 Inclusion 2: 027XY018NV

### **538--Cleaver-Genegraf-Roic association**

#### ***Composition***

##### **Major Components**

Cleaver very gravelly sandy loam, 2 to 8 percent  
 slopes--40 percent  
 Genegraf gravelly very fine sandy loam, 4 to 15  
 percent slopes--30 percent  
 Roic very gravelly fine sandy loam, 15 to 30 percent  
 slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing very stony loamy sand, 4 to  
 30 percent slopes--7 percent  
 Inclusion 2: Patna sand, 2 to 8 percent slopes--4  
 percent  
 Inclusion 3: Rock outcrop--2 percent  
 Inclusion 4: Badland--2 percent

#### ***Map Unit Setting***

*Landscape position:* Hills and intermontane basins  
 Cleaver--Landform: Fan remnants; geomorphic  
 position: summit  
 Genegraf--Landform: Fan remnants; geomorphic  
 position: backslope  
 Roic--Landform: Hills; geomorphic position:  
 backslope  
 Inclusion 1--Landform: Inset fans  
 Inclusion 2--Landform: Fan remnants; geomorphic  
 position: summit; position on slope: lower  
 Inclusion 3--Landform: Hills  
 Inclusion 4--Landform: Hills; geomorphic position:  
 backslope

#### ***Major Component Description***

##### **Cleaver Series**

*Elevation:* 4,000 to 4,700 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from

volcanic rocks

### **Genegraf Series**

*Elevation:* 4,000 to 4,700 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

### **Roic Series**

*Elevation:* 4,000 to 4,700 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

### **Dominant Present Vegetation**

Cleaver: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage

Roic: Bailey greasewood, Cooper wolfberry, Nevada dalea, bud sagebrush, littleleaf horsebrush, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, Nevada dalea, fourwing saltbush

Inclusion 3: None

Inclusion 4: None

### **Ecological Site**

Cleaver: 027XY018NV

Genegraf: 027XY018NV

Roic: 027XY027NV

Inclusion 1: 027XY050NV

Inclusion 2: 027XY009NV

Inclusion 3: none

Inclusion 4: none

## **540--Douhide-Itca-Ravenswood association**

### **Composition**

#### **Major Components**

Douhide very stony loam, 30 to 50 percent slopes--35 percent

Itca stony loam, 30 to 50 percent slopes--30 percent

Ravenswood stony loam, 30 to 50 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--7 percent

Inclusion 2: Cleavage cobbly loam, 15 to 30 percent slopes--5 percent

Inclusion 3: Jung very gravelly loam, 30 to 50 percent slopes--3 percent

### **Map Unit Setting**

*Landscape position:* Mountains

Douhide--Landform: Mountains; geomorphic position: backslope

Itca--Landform: Mountains

Ravenswood--Landform: Mountains; geomorphic position: backslope; aspect: north

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: summit; position on slope: upper

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower

### **Major Component Description**

#### **Douhide Series**

*Elevation:* 6,500 to 8,000 feet

*Precipitation:* About 13 inches

*Air temperature:* About 44 degrees

*Frost-free season:* About 80 days

*Surface rock fragments:* 10 percent stones and boulders; 5 percent cobbles; 40 percent gravel

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Itca Series**

*Elevation:* 6,500 to 8,000 feet

*Precipitation:* About 14 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 80 days

*Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Ravenswood Series**

*Elevation:* 6,500 to 8,000 feet

*Precipitation:* About 13 inches

*Air temperature:* About 45 degrees

*Frost-free season:* About 80 days

*Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### **Dominant Present Vegetation**

Douhide: Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon

Itca: Thurber needlegrass, Utah juniper, bluebunch wheatgrass, mountain big sagebrush, singleleaf pinyon

Ravenswood: Indian ricegrass, Utah juniper, singleleaf pinyon

Inclusion 1: None

Inclusion 2: Idaho fescue, Sandberg bluegrass, Webber ricegrass, bottlebrush squirreltail, low sagebrush

Inclusion 3: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

**Ecological Site**

Douhide: 028BY062NV  
 Itca: 028BY062NV  
 Ravenswood: 028BY062NV  
 Inclusion 1: none  
 Inclusion 2: 028BY034NV  
 Inclusion 3: 027XY032NV

**551--Yerington loamy fine sand, 2 to 4 percent slopes****Composition****Major Components**

Yerington loamy fine sand, 2 to 4 percent slopes--95 percent

**Contrasting Inclusions**

Inclusion 1: Isolde fine sand, 4 to 15 percent slopes--4 percent  
 Inclusion 2: Bluewing gravelly sand, 2 to 4 percent slopes--1 percent

**Map Unit Setting**

*Landscape position:* Intermontane basins  
 Yerington--Landform: Sand sheets  
 Inclusion 1--Landform: Dunes  
 Inclusion 2--Landform: Drainageways

**Major Component Description****Yerington Series**

*Elevation:* 4,400 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Loamy fine sand  
*Drainage class:* Well drained  
*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

**Dominant Present Vegetation**

Yerington: Bailey greasewood, Indian ricegrass, fourwing saltbush, low rabbitbrush, winterfat  
 Inclusion 1: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

**Ecological Site**

Yerington: 027XY009NV  
 Inclusion 1: 027XY023NV  
 Inclusion 2: 027XY022NV

**560--Izod-Rock outcrop association****Composition****Major Components**

Izod extremely cobbly loam, 15 to 50 percent slopes--75 percent  
 Rock outcrop--20 percent

**Contrasting Inclusions**

Inclusion 1: Theriot very stony loam, 15 to 50 percent slopes--5 percent

**Map Unit Setting**

*Landscape position:* Hills  
 Izod--Landform: Hills; geomorphic position: backslope  
 Rock outcrop--Landform: Hills  
 Inclusion 1--Landform: Hills; geomorphic position: backslope; position on slope: lower

**Major Component Description****Izod Series**

*Elevation:* 6,000 to 7,200 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 47 degrees  
*Frost-free season:* About 100 days  
*Texture:* Extremely cobbly loam  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Residuum and colluvium derived from limestone and dolomite

**Rock outcrop Miscellaneous Area**

*Elevation:* 6,000 to 7,200 feet

**Dominant Present Vegetation**

Izod: Indian ricegrass, Thurber needlegrass, black sagebrush, bluegrass  
 Rock outcrop: None  
 Inclusion 1: Bailey greasewood, Indian ricegrass, Nevada dalea, shadscale

**Ecological Site**

Izod: 024XY030NV  
 Rock outcrop: None  
 Inclusion 1: 029XY033NV

**572--Rawe-Malpais association****Composition****Major Components**

Rawe gravelly sandy loam, 2 to 15 percent slopes--60 percent  
 Malpais gravelly sandy loam, 2 to 15 percent slopes--25 percent

**Contrasting Inclusions**

Inclusion 1: Yerington sand, 2 to 8 percent slopes--6 percent  
 Inclusion 2: Trocken gravelly sandy loam, 2 to 8 percent slopes--6 percent  
 Inclusion 3: Bluewing gravelly sand, 2 to 8 percent slopes--3 percent

**Map Unit Setting**

*Landscape position:* Fan piedmonts  
 Rawe--Landform: Fan remnants  
 Malpais--Landform: Alluvial fans  
 Inclusion 1--Landform: Sand sheets  
 Inclusion 2--Landform: Inset fans

## Inclusion 3--Landform: Drainageways

**Major Component Description****Rawe Series**

*Elevation:* 4,400 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 115 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

**Malpais Series**

*Elevation:* 4,400 to 5,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 115 days  
*Surface rock fragments:* 5 percent cobbles; 15 percent gravel  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium and colluvium derived from mixed rocks

**Dominant Present Vegetation**

Rawe: Bailey greasewood, Indian ricegrass, shadscale  
 Malpais: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale, spiny hopsage  
 Inclusion 1: Bailey greasewood, Indian ricegrass, fourwing saltbush, low rabbitbrush, winterfat  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 3: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

**Ecological Site**

Rawe: 027XY018NV  
 Malpais: 027XY018NV  
 Inclusion 1: 027XY009NV  
 Inclusion 2: 027XY050NV  
 Inclusion 3: 027XY022NV

**580--Welch loam, 2 to 8 percent slopes****Composition****Major Components**

Welch loam, 2 to 8 percent slopes--90 percent

**Contrasting Inclusions**

Inclusion 1: Water--5 percent  
 Inclusion 2: Aridic Haploxerolls, coarse-loamy, mixed, frigid, 2 to 8 percent slopes--5 percent

**Map Unit Setting**

*Landscape position:* Intermontane basins  
 Welch--Landform: Stream terraces  
 Inclusion 1--Landform:  
 Inclusion 2--Landform: Stream terraces; position on slope: upper

**Major Component Description****Welch Series**

*Elevation:* 4,700 to 5,600 feet  
*Precipitation:* About 13 inches  
*Air temperature:* About 43 degrees  
*Frost-free season:* About 70 days  
*Texture:* Loam  
*Drainage class:* Very poorly drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

**Dominant Present Vegetation**

Welch: Meadow barley, rush, sedge, tufted hairgrass  
 Inclusion 1: None  
 Inclusion 2: Anderson peachbrush, basin big sagebrush, basin wildrye, western wheatgrass

**Ecological Site**

Welch: 027XY004NV  
 Inclusion 1: none  
 Inclusion 2: 027XY003NV

**590--Rebel-Pineval-Yody association****Composition****Major Components**

Rebel loam, 4 to 8 percent slopes--50 percent  
 Pineval gravelly loam, 4 to 8 percent slopes--20 percent  
 Yody gravelly sandy loam, 4 to 8 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Wholan silt loam, 4 to 8 percent slopes--6 percent  
 Inclusion 2: Ricert very gravelly loam, 4 to 8 percent slopes--5 percent  
 Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 4 to 8 percent slopes--4 percent

**Map Unit Setting**

*Landscape position:* Fan piedmonts  
 Rebel--Landform: Inset fans  
 Pineval--Landform: Fan remnants; position on slope: lower  
 Yody--Landform: Fan remnants; position on slope: upper  
 Inclusion 1--Landform: Inset fans; position on slope: lower  
 Inclusion 2--Landform: Fan remnants; position on slope: lower  
 Inclusion 3--Landform: Inset fans

**Major Component Description****Rebel Series**

*Elevation:* 5,500 to 6,500 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Loam  
*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### **Pineval Series**

*Elevation:* 5,500 to 6,500 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 110 days

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

#### **Yody Series**

*Elevation:* 5,500 to 6,500 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 110 days

*Texture:* Gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Rebel: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Pineval: Indian ricegrass, Wyoming big sagebrush, pine bluegrass

Yody: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 1: Indian ricegrass, bud sagebrush, fourwing saltbush, winterfat

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Rebel: 027XY008NV

Pineval: 027XY008NV

Yody: 027XY008NV

Inclusion 1: 027XY014NV

Inclusion 2: 027XY018NV

Inclusion 3: 027XY029NV

### **591--Rebel loam, 0 to 2 percent slopes**

#### ***Composition***

##### **Major Components**

Rebel loam, 0 to 2 percent slopes--85 percent

##### **Contrasting Inclusions**

Inclusion 1: Xeric Torrifluvents, coarse-loamy, mixed, nonacid, mesic, 0 to 4 percent slopes--6 percent

Inclusion 2: Torrifluventic Haploxerolls, fine-loamy, mixed, mesic, 0 to 2 percent slopes--6 percent

Inclusion 3: Chuckles loam, 0 to 2 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Rebel--Landform: Inset fans

Inclusion 1--Landform: Stream terraces; position on slope: upper

Inclusion 2--Landform: Stream terraces; position on slope: lower

Inclusion 3--Landform: Alluvial flats; position on slope: lower

#### ***Major Component Description***

##### **Rebel Series**

*Elevation:* 5,500 to 6,500 feet

*Precipitation:* About 8 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Rebel: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Inclusion 1: Anderson peachbrush, basin big sagebrush, basin wildrye, western wheatgrass

Inclusion 2: Anderson peachbrush, basin big sagebrush, basin wildrye, western wheatgrass

Inclusion 3: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

#### ***Ecological Site***

Rebel: 027XY008NV

Inclusion 1: 027XY003NV

Inclusion 2: 027XY003NV

Inclusion 3: 027XY025NV

### **592--Rebel-Wholan-Pineval association**

#### ***Composition***

##### **Major Components**

Rebel loam, 0 to 2 percent slopes--45 percent

Wholan very fine sandy loam, 0 to 2 percent slopes--30 percent

Pineval gravelly loam, 0 to 2 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Hessian loam, 0 to 2 percent slopes--6 percent

Inclusion 2: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 0 to 2 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Piedmont slopes*Rebel--Landform:* Fan skirts*Wholan--Landform:* Fan skirts; position on slope: lower*Pineval--Landform:* Fan remnants*Inclusion 1--Landform:* Fan skirts; position on slope: lower*Inclusion 2--Landform:* Drainageways**Major Component Description****Rebel Series***Elevation:* 5,500 to 5,900 feet*Precipitation:* About 8 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Wholan Series***Elevation:* 5,500 to 5,900 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Very fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Pineval Series***Elevation:* 5,500 to 5,900 feet*Precipitation:* About 8 inches*Air temperature:* About 49 degrees*Frost-free season:* About 110 days*Texture:* Gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from volcanic rocks**Dominant Present Vegetation***Rebel:* Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage*Wholan:* Indian ricegrass, bud sagebrush, fourwing saltbush, winterfat*Pineval:* Indian ricegrass, Wyoming big sagebrush, pine bluegrass*Inclusion 1:* Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, shadscale*Inclusion 2:* Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage**Ecological Site***Rebel:* 027XY008NV*Wholan:* 027XY014NV*Pineval:* 027XY008NV*Inclusion 1:* 027XY013NV*Inclusion 2:* 027XY029NV**600--Hooten-Bango-Isolde association****Composition****Major Components***Hooten* very gravelly sand, 0 to 4 percent slopes--50 percent*Bango* sandy loam, 2 to 4 percent slopes--20 percent*Isolde* fine sand, 0 to 4 percent slopes--20 percent**Contrasting Inclusions***Inclusion 1:* Playas--4 percent*Inclusion 2:* Biddleman gravelly loam, 2 to 4 percent slopes--3 percent*Inclusion 3:* Badland--3 percent**Map Unit Setting***Landscape position:* Bolsons*Hooten--Landform:* Lake terraces*Bango--Landform:* Lake terraces; position on slope: upper*Isolde--Landform:* Dunes*Inclusion 1--Landform:* Playas*Inclusion 2--Landform:* Spits*Inclusion 3--Landform:* Scarp slopes**Major Component Description****Hooten Series***Elevation:* 3,900 to 4,000 feet*Precipitation:* About 5 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Surface rock fragments:* 55 percent gravel*Texture:* Very gravelly sand*Drainage class:* Moderately well drained*Dominant parent material:* Lacustrine sediments derived from volcanic rocks**Bango Series***Elevation:* 3,900 to 4,000 feet*Precipitation:* About 5 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments**Isolde Series***Elevation:* 3,900 to 4,000 feet*Precipitation:* About 5 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Fine sand*Drainage class:* Excessively drained*Dominant parent material:* Eolian sand**Dominant Present Vegetation***Hooten:* Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, bud sagebrush, shadscale*Bango:* Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale



Isolde: Indian ricegrass, black greasewood, fourwing saltbush, shadscale

Inclusion 1: None

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 3: None

### ***Ecological Site***

Hooten: 027XY024NV

Bango: 027XY018NV

Isolde: 027XY016NV

Inclusion 1: none

Inclusion 2: 027XY018NV

Inclusion 3: none

## **610--Barnmot-Bluewing-Badland association**

### ***Composition***

#### **Major Components**

Barnmot very gravelly clay, 30 to 50 percent slopes--35 percent

Bluewing very gravelly loamy sand, 2 to 8 percent slopes--30 percent

Badland variable, 1 to 50 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Rednik very gravelly loam, 2 to 15 percent slopes--9 percent

Inclusion 2: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--5 percent

Inclusion 3: Rock outcrop--1 percent

### ***Map Unit Setting***

*Landscape position:* Hills and intermontane basins

Barnmot--Landform: Hills

Bluewing--Landform: Inset fans

Badland--Landform: Scarp slopes

Inclusion 1--Landform: Fan remnants; geomorphic position: summit

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Hills

### ***Major Component Description***

#### **Barnmot Series**

*Elevation:* 4,400 to 6,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Very gravelly clay

*Drainage class:* Well drained

*Dominant parent material:* Colluvium derived from mixed rocks over lacustrine sediments

#### **Bluewing Series**

*Elevation:* 4,400 to 6,000 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loamy sand

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from

mixed rocks

### **Badland Miscellaneous Area**

*Elevation:* 4,400 to 6,000 feet

### ***Dominant Present Vegetation***

Barnmot: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Bluewing: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Badland: None

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 3: None

### ***Ecological Site***

Barnmot: 027XY027NV

Bluewing: 027XY050NV

Badland: None

Inclusion 1: 027XY018NV

Inclusion 2: 027XY022NV

Inclusion 3: none

## **620--Findout-Uripnes-Singatse association**

### ***Composition***

#### **Major Components**

Findout very gravelly loam, 8 to 30 percent slopes--35 percent

Uripnes very stony sandy loam, 30 to 50 percent slopes--30 percent

Singatse very gravelly loam, 30 to 50 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic, 15 to 50 percent slopes--8 percent

Inclusion 2: Rock outcrop--3 percent

Inclusion 3: Xerollic Camborthids, loamy-skeletal, mixed, mesic, 30 to 50 percent slopes--2 percent

Inclusion 4: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 2 to 4 percent slopes--2 percent

### ***Map Unit Setting***

*Landscape position:* Hills

Findout--Landform: Hills; geomorphic position: backslope; shape of slope: concave

Uripnes--Landform: Hills; geomorphic position: backslope

Singatse--Landform: Hills; geomorphic position: backslope; position on slope: lower

Inclusion 1--Landform: Hills; geomorphic position: backslope; position on slope: upper; aspect: north

Inclusion 2--Landform: Hills

Inclusion 3--Landform: Hills; geomorphic position: footslope

Inclusion 4--Landform: Drainageways

**Major Component Description****Findout Series***Elevation:* 4,800 to 6,500 feet*Precipitation:* About 7 inches*Air temperature:* About 51 degrees*Frost-free season:* About 100 days*Surface rock fragments:* 1 percent stones and boulders; 3 percent cobbles; 40 percent gravel*Texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from limestone and dolomite**Uripnes Series***Elevation:* 4,800 to 6,500 feet*Precipitation:* About 6 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Texture:* Very stony sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from granitic rocks**Singatse Series***Elevation:* 4,800 to 6,500 feet*Precipitation:* About 6 inches*Air temperature:* About 51 degrees*Frost-free season:* About 110 days*Texture:* Very gravelly loam*Drainage class:* Somewhat excessively drained*Dominant parent material:* Residuum derived from mixed rocks**Dominant Present Vegetation**

Findout: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale

Uripnes: Bailey greasewood, Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale

Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Inclusion 1: Sandberg bluegrass, bottlebrush squirreltail, low sagebrush, pine bluegrass

Inclusion 2: None

Inclusion 3: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Inclusion 4: Indian ricegrass, bottlebrush squirreltail, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

**Ecological Site**

Findout: 027XY017NV

Uripnes: 027XY017NV

Singatse: 027XY027NV

Inclusion 1: 027XY032NV

Inclusion 2: none

Inclusion 3: 027XY008NV

Inclusion 4: 027XY022NV

**621--Findout-Izod-Rock outcrop association****Composition****Major Components**

Findout very gravelly loam, 15 to 50 percent slopes--35 percent

Izod extremely cobbly loam, 30 to 50 percent slopes--30 percent

Rock outcrop, 0 to 10 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Xerollic Haplargids, loamy-skeletal, mixed, mesic, 30 to 50 percent slopes--6 percent

Inclusion 2: Lithic Xeric Torriorthents, loamy, mixed (calcareous), mesic, 30 to 75 percent slopes--5 percent

Inclusion 3: Kram very stony loam, 30 to 50 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Hills

Findout--Landform: Hills; geomorphic position: backslope; aspect: south

Izod--Landform: Hills; geomorphic position: backslope; aspect: north

Rock outcrop--Landform: Hills

Inclusion 1--Landform: Hills; geomorphic position: backslope; shape of slope: concave

Inclusion 2--Landform: Hills; geomorphic position: backslope; position on slope: upper; aspect: south

Inclusion 3--Landform: Hills; geomorphic position: backslope; position on slope: upper; aspect: north

**Major Component Description****Findout Series***Elevation:* 6,000 to 7,200 feet*Precipitation:* About 7 inches*Air temperature:* About 51 degrees*Frost-free season:* About 100 days*Texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from limestone and dolomite**Izod Series***Elevation:* 6,000 to 7,200 feet*Precipitation:* About 8 inches*Air temperature:* About 47 degrees*Frost-free season:* About 100 days*Surface rock fragments:* 35 percent cobbles; 40 percent gravel*Texture:* Extremely cobbly loam*Drainage class:* Somewhat excessively drained*Dominant parent material:* Residuum and colluvium derived from limestone and dolomite

**Rock outcrop Miscellaneous Area***Elevation:* 6,000 to 7,200 feet***Dominant Present Vegetation***

Findout: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale

Izod: Indian ricegrass, Thurber needlegrass, black sagebrush, bluegrass

Rock outcrop: None

Inclusion 1: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 2: Wyoming big sagebrush

Inclusion 3: Utah juniper, black sagebrush, bottlebrush squirreltail, green ephedra, singleleaf pinyon

***Ecological Site***

Findout: 027XY017NV

Izod: 024XY030NV

Rock outcrop: None

Inclusion 1: 027XY007NV

Inclusion 2: 027XY051NV

Inclusion 3: 024XY051NV

**622--Findout-Old Camp-Rock outcrop association*****Composition*****Major Components**

Findout very gravelly loam, 30 to 50 percent slopes--50 percent

Old Camp very stony loam, 30 to 50 percent slopes--20 percent

Rock outcrop --15 percent

**Contrasting Inclusions**

Inclusion 1: Bombadil stony loam, 8 to 30 percent slopes--6 percent

Inclusion 2: Nemico stony loam, 30 to 50 percent slopes--5 percent

Inclusion 3: Izod extremely cobbly fine sandy loam, 30 to 50 percent slopes--4 percent

***Map Unit Setting****Landscape position:* Hills

Findout--Landform: Hills; geomorphic position: backslope

Old Camp--Landform: Hills; geomorphic position: backslope; aspect: north

Rock outcrop--Landform: Hills

Inclusion 1--Landform: Hills; geomorphic position: summit; position on slope: upper

Inclusion 2--Landform: Hills; geomorphic position: backslope; aspect: south

Inclusion 3--Landform: Hills; geomorphic position: backslope; aspect: north

***Major Component Description*****Findout Series***Elevation:* 5,500 to 7,000 feet*Precipitation:* About 7 inches*Air temperature:* About 51 degrees*Frost-free season:* About 100 days*Texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from limestone and dolomite**Old Camp Series***Elevation:* 5,500 to 7,000 feet*Precipitation:* About 8 inches*Air temperature:* About 49 degrees*Frost-free season:* About 100 days*Texture:* Very stony loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from volcanic rocks**Rock outcrop Miscellaneous Area***Elevation:* 5,500 to 7,000 feet***Dominant Present Vegetation***

Findout: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Rock outcrop: None

Inclusion 1: Indian ricegrass, Nevada ephedra, Wyoming big sagebrush, desert needlegrass

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale

Inclusion 3: Indian ricegrass, Thurber needlegrass, black sagebrush, bluegrass

***Ecological Site***

Findout: 027XY017NV

Old Camp: 027XY007NV

Rock outcrop: None

Inclusion 1: 027XY051NV

Inclusion 2: 027XY013NV

Inclusion 3: 027XY032NV

**640--Mazuma-Bango association*****Composition*****Major Components**

Mazuma silt loam, 0 to 2 percent slopes--65 percent

Bango sandy loam, 2 to 4 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Chuckles loam, 0 to 2 percent slopes--7 percent

Inclusion 2: Trocken very fine sandy loam, 0 to 2 percent slopes--4 percent

Inclusion 3: Biddleman gravelly sandy loam, 2 to 4 percent slopes--3 percent

Inclusion 4: Isolate fine sand, 2 to 4 percent slopes--1 percent

#### **Map Unit Setting**

*Landscape position:* Bolsons

Mazuma--Landform: Lake terraces; position on slope: lower

Bango--Landform: Lake terraces; position on slope: upper

Inclusion 1--Landform: Lake terraces

Inclusion 2--Landform: Spits

Inclusion 3--Landform: Spits; position on slope: upper

Inclusion 4--Landform: Dunes

#### **Major Component Description**

##### **Mazuma Series**

*Elevation:* 3,900 to 4,300 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Silt loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

##### **Bango Series**

*Elevation:* 3,900 to 4,300 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

#### **Dominant Present Vegetation**

Mazuma: Alkali sacaton, black greasewood, inland saltgrass, shadscale

Bango: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Basin wildrye, black greasewood, bottlebrush squirreltail, inland saltgrass, seepweed, shadscale

Inclusion 2: Indian ricegrass, black greasewood, bottlebrush squirreltail, seepweed, shadscale

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 4: Indian ricegrass, black greasewood, fourwing saltbush, shadscale

#### **Ecological Site**

Mazuma: 027XY025NV

Bango: 027XY018NV

Inclusion 1: 027XY025NV

Inclusion 2: 027XY025NV

Inclusion 3: 027XY018NV

Inclusion 4: 027XY016NV

## **643--Mazuma-Bluewing association**

#### **Composition**

##### **Major Components**

Mazuma fine sandy loam, 0 to 2 percent slopes--45 percent

Bluewing very gravelly sandy loam, 2 to 8 percent slopes--40 percent

##### **Contrasting Inclusions**

Inclusion 1: Hessian gravelly fine sandy loam, 2 to 4 percent slopes--8 percent

Inclusion 2: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--7 percent

#### **Map Unit Setting**

*Landscape position:* Intermontane basins

Mazuma--Landform: Barrier beaches

Bluewing--Landform: Barrier beaches; position on slope: upper

Inclusion 1--Landform: Barrier beaches

Inclusion 2--Landform: Drainageways

#### **Major Component Description**

##### **Mazuma Series**

*Elevation:* 3,800 to 4,500 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

##### **Bluewing Series**

*Elevation:* 3,800 to 4,500 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### **Dominant Present Vegetation**

Mazuma: Alkali sacaton, black greasewood, inland saltgrass, shadscale

Bluewing: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, shadscale

Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

#### **Ecological Site**

Mazuma: 027XY025NV

Bluewing: 027XY050NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY022NV

**644--Mazuma-Toulon-Chuckles association*****Composition*****Major Components**

Mazuma silt loam, 0 to 2 percent slopes--40 percent  
Toulon very gravelly loam, 2 to 8 percent slopes--30 percent

Chuckles silt loam, 0 to 2 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Mazuma fine sandy loam, 0 to 4 percent slopes--7 percent

Inclusion 2: Bluewing gravelly sandy loam, 0 to 4 percent slopes--1 percent

Inclusion 3: Biddleman very gravelly loam, 2 to 4 percent slopes--2 percent

***Map Unit Setting***

*Landscape position:* Intermontane basins

Mazuma--Landform: Lagoons; position on slope: upper

Toulon--Landform: Longshore bars

Chuckles--Landform: Lagoons; position on slope: lower

Inclusion 1--Landform: Lagoons; position on slope: upper

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Longshore bars; position on slope: upper

***Major Component Description*****Mazuma Series**

*Elevation:* 3,800 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Silt loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Toulon Series**

*Elevation:* 3,800 to 4,300 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loam

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Chuckles Series**

*Elevation:* 3,800 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Silt loam

*Drainage class:* Moderately well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

***Dominant Present Vegetation***

Mazuma: Indian ricegrass, black greasewood, bottlebrush squirreltail, seepweed, shadscale

Toulon: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Chuckles: Bailey greasewood, black greasewood, bottlebrush squirreltail, bud sagebrush, seepweed, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale, winterfat

Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

***Ecological Site***

Mazuma: 027XY024NV

Toulon: 027XY018NV

Chuckles: 027XY024NV

Inclusion 1: 027XY050NV

Inclusion 2: 027XY022NV

Inclusion 3: 027XY018NV

**645--Mazuma very fine sandy loam, 0 to 4 percent slopes*****Composition*****Major Components**

Mazuma very fine sandy loam, 0 to 4 percent slopes--85 percent

**Contrasting Inclusions**

Inclusion 1: Mazuma silt loam, 0 to 2 percent slopes--6 percent

Inclusion 2: Bluewing gravelly sandy loam, 0 to 2 percent slopes--6 percent

Inclusion 3: Lovelock silt loam, 0 to 2 percent slopes--3 percent

***Map Unit Setting***

*Landscape position:* Intermontane basins

Mazuma--Landform: Fan skirts

Inclusion 1--Landform: Fan skirts; position on slope: lower

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Lake plains; position on slope: lower

***Major Component Description*****Mazuma Series**

*Elevation:* 3,900 to 4,200 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

***Dominant Present Vegetation***

Mazuma: Indian ricegrass, Sandberg bluegrass, black greasewood, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, black greasewood, bottlebrush squirreltail, seepweed, shadscale  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed

***Ecological Site***

Mazuma: 027XY013NV  
 Inclusion 1: 027XY024NV  
 Inclusion 2: 027XY022NV  
 Inclusion 3: 027XY005NV

**650--Labou-Rock outcrop complex*****Composition*****Major Components**

Labou gravelly fine sandy loam, 2 to 15 percent slopes--60 percent  
 Rock outcrop, 0 to 10 percent slopes--25 percent

**Contrasting Inclusions**

Inclusion 1: Biddleman stony sandy loam, 2 to 8 percent slopes--9 percent  
 Inclusion 2: Pirouette stony loam, 2 to 4 percent slopes--4 percent  
 Inclusion 3: Hawsley sand, 4 to 8 percent slopes--2 percent

***Map Unit Setting***

*Landscape position:* Hills and intermontane basins  
 Labou--Landform: Hills  
 Rock outcrop--Landform: Hills  
 Inclusion 1--Landform: Beach terraces  
 Inclusion 2--Landform: Hills; geomorphic position: summit  
 Inclusion 3--Landform: Sand sheets

***Major Component Description*****Labou Series**

*Elevation:* 4,000 to 4,200 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 5 percent cobbles; 35 percent gravel  
*Texture:* Gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

**Rock outcrop Miscellaneous Area**

*Elevation:* 4,000 to 4,200 feet

***Dominant Present Vegetation***

Labou: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Rock outcrop: None

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 3: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat

***Ecological Site***

Labou: 027XY018NV  
 Rock outcrop: None  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY018NV  
 Inclusion 3: 027XY009NV

**660--Loomer-Duco association*****Composition*****Major Components**

Loomer very gravelly loam, 8 to 50 percent slopes--70 percent  
 Duco stony loam, 30 to 50 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Old Camp very stony loam, 15 to 50 percent slopes--9 percent  
 Inclusion 2: Hooplite very gravelly loam, 8 to 30 percent slopes--4 percent  
 Inclusion 3: Rock outcrop--2 percent

***Map Unit Setting***

*Landscape position:* Mountains  
 Loomer--Landform: Mountains; geomorphic position: summit; shape of slope: convex  
 Duco--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north  
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; aspect: south  
 Inclusion 2--Landform: Mountains; geomorphic position: shoulder; position on slope: upper; shape of slope: convex  
 Inclusion 3--Landform: Mountains

***Major Component Description*****Loomer Series**

*Elevation:* 6,000 to 7,000 feet  
*Precipitation:* About 10 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

**Duco Series**

*Elevation:* 6,000 to 7,000 feet  
*Precipitation:* About 11 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 95 days  
*Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### ***Dominant Present Vegetation***

Loomer: Sandberg bluegrass, Thurber needlegrass, spiny hopsage

Duco: Utah juniper, Wyoming big sagebrush, antelope bitterbrush, bluebunch wheatgrass, singleleaf pinyon

Inclusion 1: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 2: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Inclusion 3: None

### ***Ecological Site***

Loomer: 027XY079NV

Duco: 027XY081NV

Inclusion 1: 027XY007NV

Inclusion 2: 027XY032NV

Inclusion 3: none

## **662--Loomer-Bombadil-Old Camp association**

### ***Composition***

#### **Major Components**

Loomer gravelly loam, 15 to 50 percent slopes--50 percent

Bombadil stony loam, 30 to 50 percent slopes--20 percent

Old Camp very gravelly loam, 30 to 50 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Nemico stony loam, 15 to 30 percent slopes--8 percent

Inclusion 2: Lithic Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic, 30 to 50 percent slopes--4 percent

Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic, 2 to 8 percent slopes--3 percent

### ***Map Unit Setting***

*Landscape position:* Hills

Loomer--Landform: Hills; geomorphic position: backslope; shape of slope: convex

Bombadil--Landform: Hills; geomorphic position: backslope; shape of slope: concave; aspect: south

Old Camp--Landform: Hills; geomorphic position: backslope; aspect: north

Inclusion 1--Landform: Hills; geomorphic position: backslope; position on slope: lower; aspect: south

Inclusion 2--Landform: Hills; geomorphic position: backslope; position on slope: upper; shape of

slope: concave; aspect: north

Inclusion 3--Landform: Drainageways

### ***Major Component Description***

#### **Loomer Series**

*Elevation:* 4,900 to 6,400 feet

*Precipitation:* About 9 inches

*Air temperature:* About 47 degrees

*Frost-free season:* About 100 days

*Surface rock fragments:* 2 percent cobbles; 20 percent gravel

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Bombadil Series**

*Elevation:* 4,900 to 6,400 feet

*Precipitation:* About 10 inches

*Air temperature:* About 47 degrees

*Frost-free season:* About 100 days

*Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Old Camp Series**

*Elevation:* 4,900 to 6,400 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 100 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### ***Dominant Present Vegetation***

Loomer: Sandberg bluegrass, Thurber needlegrass, spiny hopsage

Bombadil: Indian ricegrass, Nevada ephedra, Wyoming big sagebrush, desert needlegrass

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 1: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale

Inclusion 2: Utah juniper, black sagebrush, bottlebrush squirreltail, green ephedra, singleleaf pinyon

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

### ***Ecological Site***

Loomer: 027XY079NV

Bombadil: 027XY051NV

Old Camp: 027XY007NV

Inclusion 1: 027XY018NV

Inclusion 2: 024XY051NV

Inclusion 3: 027XY008NV

**670--Celeton-Genegraf-Bedwyr association****Composition****Major Components**

Celeton very gravelly loam, 8 to 30 percent slopes--35 percent

Genegraf very gravelly sandy loam, 4 to 15 percent slopes--35 percent

Bedwyr very gravelly loam, 8 to 30 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Badland--8 percent

Inclusion 2: Trocken very gravelly sandy loam, 2 to 8 percent slopes--3 percent

Inclusion 3: Barnmot gravelly clay, 8 to 30 percent slopes--3 percent

Inclusion 4: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--1 percent

**Map Unit Setting**

*Landscape position:* Hills and intermontane basins

Celeton--Landform: Hills; geomorphic position: backslope

Genegraf--Landform: Fan remnants; geomorphic position: summit

Bedwyr--Landform: Hills; geomorphic position: backslope

Inclusion 1--Landform: Hills; geomorphic position: backslope

Inclusion 2--Landform: Inset fans

Inclusion 3--Landform: Hills; geomorphic position: backslope

Inclusion 4--Landform: Drainageways

**Major Component Description****Celeton Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from diatomite

**Genegraf Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

**Bedwyr Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 7 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 6 percent cobbles; 30 percent gravel

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

**Dominant Present Vegetation**

Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat

Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage

Bedwyr: Bailey greasewood, Indian ricegrass, Nevada ephedra, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: None

Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 3: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Inclusion 4: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

**Ecological Site**

Celeton: 027XY027NV

Genegraf: 027XY018NV

Bedwyr: 027XY027NV

Inclusion 1: none

Inclusion 2: 027XY050NV

Inclusion 3: 027XY027NV

Inclusion 4: 027XY022NV

**671--Celeton-Bedwyr-Watoopah association****Composition****Major Components**

Celeton very gravelly loam, 4 to 15 percent slopes--35 percent

Bedwyr very gravelly loam, 4 to 15 percent slopes--30 percent

Watoopah sand, 2 to 8 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Nemico very gravelly loam, 4 to 15 percent slopes--6 percent

Inclusion 2: Xeric Torripsamments, mixed, mesic, 0 to 15 percent slopes--5 percent

Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--3 percent

Inclusion 4: Wholan very fine sandy loam, 2 to 4 percent slopes--1 percent

**Map Unit Setting**

*Landscape position:* Hills and intermontane basins

Celeton--Landform: Hills

Bedwyr--Landform: Hills

Watoopah--Landform: Fan remnants

Inclusion 1--Landform: Hills



Inclusion 2--Landform: Dunes  
 Inclusion 3--Landform: Drainageways  
 Inclusion 4--Landform: Inset fans

### **Major Component Description**

#### **Celeton Series**

*Elevation:* 4,500 to 5,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from diatomite

#### **Bedwyr Series**

*Elevation:* 4,500 to 5,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

#### **Watoopah Series**

*Elevation:* 4,500 to 5,000 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Sand  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

### **Dominant Present Vegetation**

Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat  
 Bedwyr: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Watoopah: Indian ricegrass, Wyoming big sagebrush, needleandthread, western wheatgrass  
 Inclusion 1: Indian ricegrass, bud sagebrush, desert needlegrass, littleleaf horsebrush, shadscale, winterfat  
 Inclusion 2: Indian ricegrass, Nevada ephedra, Wyoming big sagebrush, fourwing saltbush, needleandthread  
 Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 4: Indian ricegrass, bud sagebrush, fourwing saltbush, winterfat

### **Ecological Site**

Celeton: 027XY027NV  
 Bedwyr: 027XY018NV  
 Watoopah: 027XY045NV  
 Inclusion 1: 027XY027NV  
 Inclusion 2: 027XY053NV  
 Inclusion 3: 027XY029NV  
 Inclusion 4: 027XY014NV

## **672--Celeton-Barnmot-Chilper association**

### **Composition**

#### **Major Components**

Celeton very cobbly sandy loam, 15 to 30 percent slopes--40 percent  
 Barnmot very gravelly clay, 15 to 30 percent slopes--25 percent  
 Chilper gravelly very fine sandy loam, 4 to 8 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Trocken very gravelly sandy loam, 8 to 30 percent slopes--6 percent  
 Inclusion 2: Badland--5 percent  
 Inclusion 3: Cleaver gravelly loam, 2 to 4 percent slopes--4 percent

### **Map Unit Setting**

*Landscape position:* Hills and intermontane basins  
 Celeton--Landform: Hills; geomorphic position: backslope  
 Barnmot--Landform: Hills; geomorphic position: backslope  
 Chilper--Landform: Fan remnants  
 Inclusion 1--Landform: Fan remnants; geomorphic position: backslope  
 Inclusion 2--Landform: Hills; geomorphic position: backslope  
 Inclusion 3--Landform: Fan remnants; geomorphic position: summit

### **Major Component Description**

#### **Celeton Series**

*Elevation:* 4,000 to 4,600 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very cobbly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from diatomite

#### **Barnmot Series**

*Elevation:* 4,000 to 4,600 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly clay  
*Drainage class:* Well drained  
*Dominant parent material:* Colluvium derived from mixed rocks over lacustrine sediments

#### **Chilper Series**

*Elevation:* 4,000 to 4,600 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic rocks

**Dominant Present Vegetation**

Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat  
 Barnmot: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale  
 Chilper: Bluegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 2: None  
 Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

**Ecological Site**

Celeton: 027XY027NV  
 Barnmot: 027XY027NV  
 Chilper: 027XY013NV  
 Inclusion 1: 027XY050NV  
 Inclusion 2: none  
 Inclusion 3: 027XY018NV

**680--Bombadil-Old Camp association****Composition**

**Major Components**  
 Bombadil stony loam, 15 to 50 percent slopes--65 percent  
 Old Camp very gravelly loam, 30 to 50 percent slopes--20 percent  
**Contrasting Inclusions**  
 Inclusion 1: Rock outcrop--7 percent  
 Inclusion 2: Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic, 2 to 8 percent slopes--4 percent  
 Inclusion 3: Loomer cobbly loam, 15 to 30 percent slopes--4 percent

**Map Unit Setting**

**Landscape position:** Hills  
 Bombadil--Landform: Hills; geomorphic position: backslope; aspect: south  
 Old Camp--Landform: Hills; geomorphic position: backslope; aspect: north  
 Inclusion 1--Landform: Hills  
 Inclusion 2--Landform: Drainageways  
 Inclusion 3--Landform: Hills; position on slope: lower; shape of slope: convex

**Major Component Description**

**Bombadil Series**  
*Elevation:* 4,900 to 6,000 feet  
*Precipitation:* About 10 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 100 days  
*Surface rock fragments:* 2 percent stones and boulders  
*Texture:* Stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

**Old Camp Series**

*Elevation:* 4,900 to 6,000 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

**Dominant Present Vegetation**

Bombadil: Indian ricegrass, Nevada ephedra, Wyoming big sagebrush, desert needlegrass  
 Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Inclusion 1: None  
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Sandberg bluegrass, Thurber needlegrass, spiny hopsage

**Ecological Site**

Bombadil: 027XY051NV  
 Old Camp: 027XY007NV  
 Inclusion 1: none  
 Inclusion 2: 027XY029NV  
 Inclusion 3: 027XY079NV

**691--Osobb-Singatse-Pirouette association****Composition**

**Major Components**  
 Osobb very stony very fine sandy loam, 15 to 50 percent slopes--35 percent  
 Singatse very gravelly sandy loam, 15 to 50 percent slopes--30 percent  
 Pirouette very stony very fine sandy loam, 4 to 15 percent slopes--20 percent  
**Contrasting Inclusions**  
 Inclusion 1: Celeton very gravelly loam, 8 to 50 percent slopes--5 percent  
 Inclusion 2: Theon stony sandy loam, 15 to 50 percent slopes--4 percent  
 Inclusion 3: Old Camp extremely stony loam, 30 to 50 percent slopes--4 percent  
 Inclusion 4: Rock outcrop--2 percent

**Map Unit Setting**

**Landscape position:** Plateaus and hills  
 Osobb--Landform: Plateaus; geomorphic position: backslope  
 Singatse--Landform: Hills; geomorphic position: backslope  
 Pirouette--Landform: Plateaus; geomorphic position: summit  
 Inclusion 1--Landform: Hills; geomorphic position: backslope  
 Inclusion 2--Landform: Hills; geomorphic position: backslope; shape of slope: concave

Inclusion 3--Landform: Hills; geomorphic position: backslope; position on slope: upper; aspect: north

Inclusion 4--Landform: Plateaus

### **Major Component Description**

#### **Osobb Series**

*Elevation:* 4,200 to 5,600 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Texture:* Very stony very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Singatse Series**

*Elevation:* 4,200 to 5,600 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Pirouette Series**

*Elevation:* 4,200 to 5,600 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very stony very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### **Dominant Present Vegetation**

Osobb: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale

Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat

Inclusion 2: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 3: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 4: None

### **Ecological Site**

Osobb: 027XY027NV

Singatse: 027XY027NV

Pirouette: 027XY018NV

Inclusion 1: 027XY027NV

Inclusion 2: 027XY019NV

Inclusion 3: 027XY007NV

Inclusion 4: none

## **700--Clanalpine-Itca-Old Camp association**

### **Composition**

#### **Major Components**

Clanalpine very gravelly loam, 50 to 75 percent slopes--40 percent

Itca stony loam, 30 to 50 percent slopes--30 percent

Old Camp very gravelly loam, 30 to 50 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Hooplite very gravelly loam, 15 to 30 percent slopes--6 percent

Inclusion 2: Roca very gravelly loam, 30 to 50 percent slopes--5 percent

Inclusion 3: Jobpeak very gravelly loam, 50 to 75 percent slopes--4 percent

### **Map Unit Setting**

*Landscape position:* Mountains

Clanalpine--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Itca--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

Old Camp--Landform: Mountains; geomorphic position: backslope; aspect: south

Inclusion 1--Landform: Mountains; position on slope: lower

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

### **Major Component Description**

#### **Clanalpine Series**

*Elevation:* 6,800 to 8,100 feet

*Precipitation:* About 12 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 80 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Itca Series**

*Elevation:* 6,800 to 8,100 feet

*Precipitation:* About 12 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 80 days

*Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Old Camp Series**

*Elevation:* 6,800 to 7,200 feet

*Precipitation:* About 10 inches

*Air temperature:* About 47 degrees

*Frost-free season:* About 90 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

### ***Dominant Present Vegetation***

Clanalpine: Idaho fescue, lupine, mountain big sagebrush, pine bluegrass, singleleaf pinyon, snowberry

Itca: Idaho fescue, Thurber needlegrass, Utah juniper, mountain big sagebrush, singleleaf pinyon

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 1: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass

Inclusion 3: Douglas rabbitbrush, Sandberg bluegrass, Utah juniper, Wyoming big sagebrush

### ***Ecological Site***

Clanalpine: 027XY080NV

Itca: 027XY080NV

Old Camp: 027XY007NV

Inclusion 1: 027XY032NV

Inclusion 2: 024XY028NV

Inclusion 3: 027XY082NV

## **710--Luning-Izo association**

### ***Composition***

#### **Major Components**

Luning loamy sand, 2 to 4 percent slopes--75 percent

Izo very gravelly sand, 2 to 4 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Annaw loamy sand, 2 to 4 percent slopes--7 percent

Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 0 to 4 percent slopes--3 percent

### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Luning--Landform: Sand sheets

Izo--Landform: Drainageways

Inclusion 1--Landform: Fan skirts; position on slope: upper

Inclusion 2--Landform: Dunes; position on slope: upper

### ***Major Component Description***

#### **Luning Series**

*Elevation:* 4,600 to 5,600 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 130 days

*Texture:* Loamy sand

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Eolian sand over alluvium derived from mixed rocks

### **Izo Series**

*Elevation:* 4,600 to 5,600 feet

*Precipitation:* About 6 inches

*Air temperature:* About 53 degrees

*Frost-free season:* About 130 days

*Texture:* Very gravelly sand

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Luning: Cooper wolfberry, Indian ricegrass, bottlebrush squirreltail, dalea

Izo: Indian ricegrass, burrobrush, fourwing saltbush, littleleaf horsebrush, rubber rabbitbrush

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, galleta, shadscale

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

### ***Ecological Site***

Luning: 027XY060NV

Izo: 029XY041NV

Inclusion 1: 029XY017NV

Inclusion 2: 027XY029NV

## **730--Hooplite-Theon-Old Camp association**

### ***Composition***

#### **Major Components**

Hooplite very gravelly fine sandy loam, 15 to 50 percent slopes--40 percent

Theon very gravelly sandy loam, 15 to 50 percent slopes--30 percent

Old Camp very gravelly fine sandy loam, 15 to 50 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Singatse very gravelly sandy loam, 15 to 50 percent slopes--10 percent

Inclusion 2: Rock outcrop--5 percent

### ***Map Unit Setting***

*Landscape position:* Mountains

Hooplite--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

Theon--Landform: Mountains; geomorphic position: backslope; aspect: south

Old Camp--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south

Inclusion 2--Landform: Mountains

**Major Component Description****Hooplite Series***Elevation:* 5,400 to 6,800 feet*Precipitation:* About 9 inches*Air temperature:* About 48 degrees*Frost-free season:* About 100 days*Texture:* Very gravelly fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Theon Series***Elevation:* 5,400 to 6,800 feet*Precipitation:* About 8 inches*Air temperature:* About 49 degrees*Frost-free season:* About 110 days*Texture:* Very gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from volcanic rocks**Old Camp Series***Elevation:* 5,400 to 6,800 feet*Precipitation:* About 9 inches*Air temperature:* About 49 degrees*Frost-free season:* About 100 days*Texture:* Very gravelly fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from volcanic rocks**Dominant Present Vegetation**

Hooplite: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Theon: Bailey greasewood, bud sagebrush, desert needlegrass, shadscale

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 1: Bailey greasewood, shadscale

Inclusion 2: None

**Ecological Site**

Hooplite: 027XY032NV

Theon: 027XY019NV

Old Camp: 027XY007NV

Inclusion 1: 027XY027NV

Inclusion 2: none

**731--Hooplite-Old Camp-Singatse association****Composition****Major Components**

Hooplite very gravelly fine sandy loam, 15 to 50 percent slopes--40 percent

Old Camp very gravelly fine sandy loam, 15 to 50 percent slopes--30 percent

Singatse very gravelly sandy loam, 30 to 75 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Rock outcrop--8 percent

Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 0 to 2 percent slopes--5 percent

Inclusion 3: Pineval very gravelly loam, 2 to 8 percent slopes--2 percent

**Map Unit Setting***Landscape position:* Mountains and intermontane basins

Hooplite--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

Old Camp--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Singatse--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Alluvial fans

**Major Component Description****Hooplite Series***Elevation:* 5,700 to 7,100 feet*Precipitation:* About 9 inches*Air temperature:* About 48 degrees*Frost-free season:* About 100 days*Texture:* Very gravelly fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum derived from volcanic rocks**Old Camp Series***Elevation:* 5,700 to 7,100 feet*Precipitation:* About 9 inches*Air temperature:* About 49 degrees*Frost-free season:* About 100 days*Texture:* Very gravelly fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Singatse Series***Elevation:* 5,700 to 7,000 feet*Precipitation:* About 8 inches*Air temperature:* About 51 degrees*Frost-free season:* About 110 days*Texture:* Very gravelly sandy loam*Drainage class:* Somewhat excessively drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Dominant Present Vegetation**

Hooplite: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Inclusion 1: None  
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Nevada ephedra, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

#### ***Ecological Site***

Hooplite: 027XY032NV  
 Old Camp: 027XY007NV  
 Singatse: 027XY027NV  
 Inclusion 1: none  
 Inclusion 2: 027XY029NV  
 Inclusion 3: 027XY008NV

### **732--Hooplite-Old Camp-Puett association**

#### ***Composition***

##### **Major Components**

Hooplite very gravelly fine sandy loam, 15 to 50 percent slopes--45 percent  
 Old Camp very gravelly loam, 15 to 30 percent slopes--25 percent  
 Puett fine sandy loam, 30 to 50 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Xerollic Haplargids, fine-loamy, mixed, mesic, 4 to 8 percent slopes--8 percent  
 Inclusion 2: Puett fine sandy loam, 4 to 15 percent slopes--2 percent

#### ***Map Unit Setting***

**Landscape position:** Hills and intermontane basins  
 Hooplite--Landform: Hills; geomorphic position: backslope; shape of slope: convex  
 Old Camp--Landform: Hills; geomorphic position: backslope; shape of slope: concave  
 Puett--Landform: Hills; geomorphic position: backslope; shape of slope: convex  
 Inclusion 1--Landform: Alluvial fans  
 Inclusion 2--Landform: Hills; geomorphic position: summit

#### ***Major Component Description***

##### **Hooplite Series**

**Elevation:** 6,200 to 7,400 feet  
**Precipitation:** About 9 inches  
**Air temperature:** About 48 degrees  
**Frost-free season:** About 100 days  
**Surface rock fragments:** 2 percent stones and boulders; 10 percent cobbles; 25 percent gravel  
**Texture:** Very gravelly fine sandy loam  
**Drainage class:** Well drained  
**Dominant parent material:** Residuum and colluvium derived from volcanic rocks

##### **Old Camp Series**

**Elevation:** 6,200 to 7,200 feet  
**Precipitation:** About 9 inches  
**Air temperature:** About 49 degrees

**Frost-free season:** About 100 days  
**Texture:** Very gravelly loam  
**Drainage class:** Well drained  
**Dominant parent material:** Residuum and colluvium derived from volcanic rocks

##### **Puett Series**

**Elevation:** 6,200 to 7,200 feet  
**Precipitation:** About 9 inches  
**Air temperature:** About 49 degrees  
**Frost-free season:** About 110 days  
**Texture:** Fine sandy loam  
**Drainage class:** Well drained  
**Dominant parent material:** Residuum and colluvium derived from tuffaceous rocks

#### ***Dominant Present Vegetation***

Hooplite: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale  
 Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Puett: Indian ricegrass, Sandberg bluegrass, black sagebrush, needleandthread, shadscale  
 Inclusion 1: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage  
 Inclusion 2: Indian ricegrass, Sandberg bluegrass, black sagebrush, needleandthread, shadscale

#### ***Ecological Site***

Hooplite: 027XY032NV  
 Old Camp: 027XY007NV  
 Puett: 028BY016NV  
 Inclusion 1: 027XY008NV  
 Inclusion 2: 028BY016NV

### **733--Hooplite-Old Camp-Jung association**

#### ***Composition***

##### **Major Components**

Hooplite very gravelly fine sandy loam, 15 to 50 percent slopes--35 percent  
 Old Camp very gravelly loam, 15 to 50 percent slopes--30 percent  
 Jung stony loam, 15 to 50 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Nemico very stony loam, 8 to 30 percent slopes--6 percent  
 Inclusion 2: Theon very gravelly fine sandy loam, 15 to 30 percent slopes--5 percent  
 Inclusion 3: Puett sandy loam, 8 to 30 percent slopes--4 percent

#### ***Map Unit Setting***

**Landscape position:** Mountains  
 Hooplite--Landform: Mountains; geomorphic position: backslope; shape of slope: convex  
 Old Camp--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Jung--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south  
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: south  
 Inclusion 2--Landform: Mountains; geomorphic position: backslope; aspect: south  
 Inclusion 3--Landform: Mountains

### **Major Component Description**

#### **Hooplite Series**

*Elevation:* 6,000 to 7,000 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Old Camp Series**

*Elevation:* 6,000 to 7,000 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### **Jung Series**

*Elevation:* 6,000 to 7,000 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 95 days  
*Texture:* Stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

### **Dominant Present Vegetation**

Hooplite: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale  
 Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Jung: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, galleta, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, shadscale  
 Inclusion 3: Indian ricegrass, Sandberg bluegrass, black sagebrush, needleandthread, shadscale

### **Ecological Site**

Hooplite: 027XY032NV  
 Old Camp: 027XY007NV  
 Jung: 027XY032NV  
 Inclusion 1: 027XY015NV  
 Inclusion 2: 027XY019NV

Inclusion 3: 028BY016NV

## **734--Hooplite-Theon-Puett association**

### **Composition**

#### **Major Components**

Hooplite very gravelly fine sandy loam, 15 to 50 percent slopes--40 percent  
 Theon very gravelly sandy loam, 15 to 50 percent slopes--30 percent  
 Puett fine sandy loam, 15 to 50 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Old Camp very gravelly loam, 8 to 30 percent slopes--6 percent  
 Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--5 percent  
 Inclusion 3: Celeton very gravelly loam, 4 to 15 percent slopes--4 percent

### **Map Unit Setting**

*Landscape position:* Hills  
 Hooplite--Landform: Hills; geomorphic position: backslope; aspect: north  
 Theon--Landform: Hills; geomorphic position: backslope; aspect: south  
 Puett--Landform: Hills; geomorphic position: backslope  
 Inclusion 1--Landform: Hills; position on slope: upper; shape of slope: concave; aspect: north  
 Inclusion 2--Landform: Drainageways  
 Inclusion 3--Landform: Hills; geomorphic position: backslope; position on slope: lower

### **Major Component Description**

#### **Hooplite Series**

*Elevation:* 5,900 to 6,900 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Very gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Theon Series**

*Elevation:* 5,900 to 6,900 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### **Puett Series**

*Elevation:* 5,900 to 6,900 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from tuffaceous rocks

### ***Dominant Present Vegetation***

Hooplite: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Theon: Bailey greasewood, bud sagebrush, desert needlegrass, shadscale

Puett: Indian ricegrass, Sandberg bluegrass, black sagebrush, needleandthread, shadscale

Inclusion 1: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 3: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat

### ***Ecological Site***

Hooplite: 027XY032NV

Theon: 027XY019NV

Puett: 028BY016NV

Inclusion 1: 027XY007NV

Inclusion 2: 027XY029NV

Inclusion 3: 027XY027NV

## **735--Hooplite-Old Camp-Duco association**

### ***Composition***

#### **Major Components**

Hooplite very gravelly fine sandy loam, 15 to 50 percent slopes--35 percent

Old Camp very stony loam, 30 to 50 percent slopes--35 percent

Duco very stony sandy loam, 15 to 50 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Loomer cobbly loam, 15 to 50 percent slopes--7 percent

Inclusion 2: Roca very stony loam, 8 to 30 percent slopes--5 percent

Inclusion 3: Rock outcrop--3 percent

### ***Map Unit Setting***

*Landscape position:* Mountains

Hooplite--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Old Camp--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Duco--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

Inclusion 3--Landform: Mountains

### ***Major Component Description***

#### **Hooplite Series**

*Elevation:* 6,200 to 7,200 feet

*Precipitation:* About 9 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 100 days

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Old Camp Series**

*Elevation:* 6,200 to 7,200 feet

*Precipitation:* About 9 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 100 days

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Duco Series**

*Elevation:* 6,500 to 7,200 feet

*Precipitation:* About 11 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 95 days

*Texture:* Very stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### ***Dominant Present Vegetation***

Hooplite: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, pine bluegrass, shadscale

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Duco: Utah juniper, Wyoming big sagebrush, antelope bitterbrush, bluebunch wheatgrass, singleleaf pinyon

Inclusion 1: Sandberg bluegrass, Thurber needlegrass, spiny hopsage

Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass

Inclusion 3: None

### ***Ecological Site***

Hooplite: 027XY032NV

Old Camp: 027XY007NV

Duco: 027XY081NV

Inclusion 1: 027XY079NV

Inclusion 2: 024XY028NV

Inclusion 3: none



**740--Packer-Layview-Hapgood association****Composition****Major Components**

Packer very gravelly loam, 15 to 50 percent slopes--40 percent

Layview very gravelly sandy loam, 8 to 15 percent slopes--25 percent

Hapgood very gravelly loam, 30 to 50 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Hapgood gravelly loam, 8 to 15 percent slopes--5 percent

Inclusion 2: Lithic Cryoborolls, loamy-skeletal, mixed, 30 to 75 percent slopes--4 percent

Inclusion 3: Rock outcrop--4 percent

Inclusion 4: Welch loam, 2 to 8 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Mountains

*Packer--Landform:* Mountains; geomorphic position: backslope; shape of slope: convex

*Layview--Landform:* Mountains; geomorphic position: summit

*Hapgood--Landform:* Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

*Inclusion 1--Landform:* Mountains; geomorphic position: backslope; shape of slope: concave

*Inclusion 2--Landform:* Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

*Inclusion 3--Landform:* Mountains

*Inclusion 4--Landform:* Mountains; geomorphic position: footslope

**Major Component Description****Packer Series**

*Elevation:* 8,000 to 10,000 feet

*Precipitation:* About 15 inches

*Air temperature:* About 42 degrees

*Frost-free season:* About 60 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Layview Series**

*Elevation:* 8,000 to 10,000 feet

*Precipitation:* About 14 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 60 days

*Surface rock fragments:* 5 percent cobbles; 50 percent gravel

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

**Hapgood Series**

*Elevation:* 8,000 to 10,000 feet

*Precipitation:* About 14 inches

*Air temperature:* About 42 degrees

*Frost-free season:* About 50 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Colluvium derived from mixed rocks, loess, and volcanic ash

**Dominant Present Vegetation**

Packer: Idaho fescue, Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, low sagebrush

Layview: Idaho fescue, Sandberg bluegrass, bluebunch wheatgrass, low sagebrush, pine bluegrass

Hapgood: Cusick bluegrass, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, snowberry

Inclusion 1: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, quaking aspen

Inclusion 2: Currant, mountain brome, quaking aspen, slender wheatgrass, snowberry

Inclusion 3: None

Inclusion 4: Idaho fescue, Nevada bluegrass, rush, sedge, tufted hairgrass

**Ecological Site**

Packer: 024XY016NV

Layview: 024XY016NV

Hapgood: 024XY023NV

Inclusion 1: 024XY023NV

Inclusion 2: 028BY067NV

Inclusion 3: none

Inclusion 4: 027XY004NV

**741--Packer-Hapgood-Rock outcrop association****Composition****Major Components**

Packer extremely gravelly loam, 8 to 15 percent slopes--50 percent

Hapgood gravelly loam, 8 to 15 percent slopes--20 percent

Rock outcrop--15 percent

**Contrasting Inclusions**

Inclusion 1: Layview very gravelly sandy loam, 15 to 50 percent slopes--6 percent

Inclusion 2: Lithic Cryoborolls, loamy-skeletal, mixed, 15 to 30 percent slopes--5 percent

Inclusion 3: Pachic Cryoborolls, loamy-skeletal, mixed, 8 to 15 percent slopes--2 percent

Inclusion 4: Welch loam, 2 to 8 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Mountains

*Packer--Landform:* Mountains; geomorphic position: summit

*Hapgood--Landform:* Mountains; geomorphic position: backslope; shape of slope: concave

Rock outcrop--Landform: Mountains  
 Inclusion 1--Landform: Mountains; geomorphic position: shoulder; shape of slope: convex  
 Inclusion 2--Landform: Mountains; geomorphic position: summit  
 Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: concave  
 Inclusion 4--Landform: Drainageways

### **Major Component Description**

#### **Packer Series**

*Elevation:* 8,000 to 9,000 feet  
*Precipitation:* About 15 inches  
*Air temperature:* About 42 degrees  
*Frost-free season:* About 60 days  
*Texture:* Extremely gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Hapgood Series**

*Elevation:* 8,000 to 9,000 feet  
*Precipitation:* About 16 inches  
*Air temperature:* About 42 degrees  
*Frost-free season:* About 50 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Colluvium derived from mixed rocks, loess, and volcanic ash

#### **Rock outcrop Miscellaneous Area**

*Elevation:* 8,000 to 9,000 feet

### **Dominant Present Vegetation**

Packer: Idaho fescue, Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, low sagebrush  
 Hapgood: Columbia needlegrass, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, mountain brome  
 Rock outcrop: None  
 Inclusion 1: Idaho fescue, Sandberg bluegrass, bluebunch wheatgrass, low sagebrush, pine bluegrass  
 Inclusion 2: Bluebunch wheatgrass, mountain big sagebrush, needlegrass, snowberry  
 Inclusion 3: Currant, mountain brome, quaking aspen, slender wheatgrass, snowberry  
 Inclusion 4: Idaho fescue, Nevada bluegrass, rush, sedge, tufted hairgrass

### **Ecological Site**

Packer: 024XY016NV  
 Hapgood: 024XY032NV  
 Rock outcrop: None  
 Inclusion 1: 024XY016NV  
 Inclusion 2: 028BY032NV  
 Inclusion 3: 028BY067NV  
 Inclusion 4: 027XY004NV

## **760--Burnborough-Cleavage-Welch association**

### **Composition**

#### **Major Components**

Burnborough very gravelly loam, 15 to 30 percent slopes--35 percent  
 Cleavage very gravelly loam, 8 to 30 percent slopes--30 percent  
 Welch clay loam, 4 to 8 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Fluventic Argixerolls, loamy-skeletal, mixed, frigid, 4 to 8 percent slopes--7 percent  
 Inclusion 2: Aquic Xerofluvents, loamy-skeletal, mixed, nonacid, frigid, 4 to 8 percent slopes--2 percent  
 Inclusion 3: Hapgood very gravelly loam, 15 to 30 percent slopes--6 percent

### **Map Unit Setting**

*Landscape position:* Mountains  
 Burnborough--Landform: Mountains; geomorphic position: backslope  
 Cleavage--Landform: Mountains; geomorphic position: backslope; shape of slope: convex  
 Welch--Landform: Stream terraces  
 Inclusion 1--Landform: Mountains; geomorphic position: toeslope  
 Inclusion 2--Landform: Stream terraces  
 Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

### **Major Component Description**

#### **Burnborough Series**

*Elevation:* 7,200 to 8,000 feet  
*Precipitation:* About 14 inches  
*Air temperature:* About 43 degrees  
*Frost-free season:* About 70 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Cleavage Series**

*Elevation:* 7,200 to 8,000 feet  
*Precipitation:* About 13 inches  
*Air temperature:* About 44 degrees  
*Frost-free season:* About 80 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

#### **Welch Series**

*Elevation:* 7,200 to 8,000 feet  
*Precipitation:* About 13 inches  
*Air temperature:* About 43 degrees  
*Frost-free season:* About 70 days

*Texture:* Clay loam

*Drainage class:* Very poorly drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### ***Dominant Present Vegetation***

Burnborough: Idaho fescue, Nevada bluegrass, Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush

Cleavage: Idaho fescue, Sandberg bluegrass, Webber ricegrass, bottlebrush squirreltail, low sagebrush

Welch: Idaho fescue, Nevada bluegrass, rush, sedge, tufted hairgrass

Inclusion 1: Anderson peachbrush, basin big sagebrush, basin wildrye, western wheatgrass

Inclusion 2: Nevada bluegrass, alpine timothy, streambank wheatgrass, tufted hairgrass

Inclusion 3: Columbia needlegrass, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, mountain brome, quaking aspen

#### ***Ecological Site***

Burnborough: 024XY021NV

Cleavage: 024XY016NV

Welch: 027XY004NV

Inclusion 1: 027XY003NV

Inclusion 2: 028BY025NV

Inclusion 3: 024XY032NV

### **761--Burnborough-Cleavage-Reluctan association**

#### ***Composition***

##### **Major Components**

Burnborough very gravelly loam, 15 to 30 percent slopes--40 percent

Cleavage very gravelly loam, 4 to 15 percent slopes--30 percent

Reluctan very gravelly loam, 15 to 30 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Roca very gravelly loam, 30 to 50 percent slopes--5 percent

Inclusion 2: Kram very gravelly loam, 50 to 75 percent slopes--5 percent

Inclusion 3: Rock outcrop--5 percent

#### ***Map Unit Setting***

*Landscape position:* Mountains

Burnborough--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Cleavage--Landform: Mountains; geomorphic position: summit

Reluctan--Landform: Mountains; geomorphic position: backslope

Inclusion 1--Landform: Mountains; geomorphic position: backslope; aspect: south

Inclusion 2--Landform: Mountains; geomorphic

position: backslope; position on slope: lower  
Inclusion 3--Landform: Mountains

#### ***Major Component Description***

##### **Burnborough Series**

*Elevation:* 7,900 to 8,100 feet

*Precipitation:* About 14 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 70 days

*Surface rock fragments:* 10 percent cobbles; 30 percent gravel

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Cleavage Series**

*Elevation:* 7,900 to 8,100 feet

*Precipitation:* About 13 inches

*Air temperature:* About 44 degrees

*Frost-free season:* About 80 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

##### **Reluctan Series**

*Elevation:* 7,900 to 8,100 feet

*Precipitation:* About 13 inches

*Air temperature:* About 44 degrees

*Frost-free season:* About 80 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Burnborough: Idaho fescue, Nevada bluegrass, Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush

Cleavage: Idaho fescue, Sandberg bluegrass, Webber ricegrass, bottlebrush squirreltail, low sagebrush

Reluctan: Idaho fescue, Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush, pine bluegrass

Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass

Inclusion 2: Utah juniper, black sagebrush, bottlebrush squirreltail, green ephedra, singleleaf pinyon

Inclusion 3: None

#### ***Ecological Site***

Burnborough: 024XY021NV

Cleavage: 024XY016NV

Reluctan: 024XY021NV

Inclusion 1: 024XY028NV

Inclusion 2: 024XY051NV

Inclusion 3: none

**770--Chilper-Bundorf-Trocken association*****Composition*****Major Components**

Chilper gravelly very fine sandy loam, 4 to 8 percent slopes--50 percent

Bundorf gravelly loam, 4 to 8 percent slopes--20 percent

Trocken gravelly very fine sandy loam, 2 to 4 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 4 percent slopes--6 percent

Inclusion 2: Torrifluventic Haploxerolls, loamy-skeletal, mixed, mesic, 2 to 4 percent slopes--4 percent

***Map Unit Setting***

*Landscape position:* Fan piedmonts

Chilper--Landform: Fan remnants; position on slope: lower

Bundorf--Landform: Fan remnants; position on slope: upper

Trocken--Landform: Inset fans

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Drainageways; position on slope: upper

***Major Component Description*****Chilper Series**

*Elevation:* 5,400 to 6,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 25 percent gravel

*Texture:* Gravelly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

**Bundorf Series**

*Elevation:* 5,400 to 6,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 100 days

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Trocken Series**

*Elevation:* 5,400 to 6,000 feet

*Precipitation:* About 7 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 110 days

*Texture:* Gravelly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

***Dominant Present Vegetation***

Chilper: Bluegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Bundorf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
Trocken: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 2: Anderson peachbrush, basin big sagebrush, basin wildrye, western wheatgrass

***Ecological Site***

Chilper: 027XY013NV

Bundorf: 027XY018NV

Trocken: 027XY013NV

Inclusion 1: 027XY029NV

Inclusion 2: 027XY003NV

**772--Chilper-Trocken-Jerval association*****Composition*****Major Components**

Chilper cobbly very fine sandy loam, 2 to 8 percent slopes--35 percent

Trocken gravelly very fine sandy loam, 2 to 8 percent slopes--30 percent

Jerval gravelly very fine sandy loam, 2 to 8 percent slopes--25 percent

**Contrasting Inclusions**

Inclusion 1: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--6 percent

Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 4 percent slopes--4 percent

***Map Unit Setting***

*Landscape position:* Fan piedmonts

Chilper--Landform: Fan remnants; position on slope: upper

Trocken--Landform: Inset fans

Jerval--Landform: Fan remnants; position on slope: lower

Inclusion 1--Landform: Drainageways; position on slope: lower

Inclusion 2--Landform: Drainageways; position on slope: upper

***Major Component Description*****Chilper Series**

*Elevation:* 4,200 to 4,600 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Cobbly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

**Trocken Series**

*Elevation:* 4,200 to 4,600 feet

*Precipitation:* About 7 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Jervall Series**

*Elevation:* 4,200 to 4,600 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### **Dominant Present Vegetation**

Chilper: Bluegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Trocken: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat  
 Jervall: Bottlebrush squirreltail, bud sagebrush, shadscale, winterfat  
 Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

#### **Ecological Site**

Chilper: 027XY013NV  
 Trocken: 027XY013NV  
 Jervall: 027XY013NV  
 Inclusion 1: 027XY022NV  
 Inclusion 2: 027XY029NV

### **790--Jacratz-Nayfan association**

#### **Composition**

##### **Major Components**

Jacratz very gravelly clay loam, 30 to 75 percent slopes--45 percent  
 Nayfan gravelly loam, 30 to 50 percent slopes--40 percent

##### **Contrasting Inclusions**

Inclusion 1: Reluctant gravelly loam, 30 to 50 percent slopes--8 percent  
 Inclusion 2: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 50 to 75 percent slopes--3 percent  
 Inclusion 3: Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic, 30 to 50 percent slopes--2 percent  
 Inclusion 4: Rock outcrop--2 percent

#### **Map Unit Setting**

*Landscape position:* Mountains

Jacratz--Landform: Mountains; aspect: south  
 Nayfan--Landform: Mountains; aspect: north  
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north  
 Inclusion 2--Landform: Mountains; position on slope: lower; aspect: south  
 Inclusion 3--Landform: Mountains; shape of slope: concave; aspect: south  
 Inclusion 4--Landform: Mountains

#### **Major Component Description**

##### **Jacratz Series**

*Elevation:* 6,000 to 7,200 feet  
*Precipitation:* About 12 inches  
*Air temperature:* About 45 degrees  
*Frost-free season:* About 100 days  
*Surface rock fragments:* 2 percent stones and boulders; 10 percent cobbles; 40 percent gravel  
*Texture:* Very gravelly clay loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

##### **Nayfan Series**

*Elevation:* 6,000 to 7,200 feet  
*Precipitation:* About 13 inches  
*Air temperature:* About 44 degrees  
*Frost-free season:* About 90 days  
*Surface rock fragments:* 15 percent gravel  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

#### **Dominant Present Vegetation**

Jacratz: Nevada ephedra, Thurber needlegrass, Utah juniper, Wyoming big sagebrush, singleleaf pinyon  
 Nayfan: Idaho fescue, lupine, mountain big sagebrush, pine bluegrass, singleleaf pinyon, snowberry  
 Inclusion 1: Idaho fescue, Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush, pine bluegrass  
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Utah juniper, Wyoming big sagebrush, antelope bitterbrush, bluebunch wheatgrass, singleleaf pinyon  
 Inclusion 4: None

#### **Ecological Site**

Jacratz: 027XY081NV  
 Nayfan: 027XY080NV  
 Inclusion 1: 024XY021NV  
 Inclusion 2: 027XY081NV

Inclusion 3: O27XY081NV  
Inclusion 4: none

## 800--Bedwyr-Celeton association

### *Composition*

#### **Major Components**

Bedwyr stony loam, 4 to 15 percent slopes--65 percent  
Celeton very gravelly loam, 15 to 30 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Ricert gravelly sandy loam, 8 to 15 percent slopes--10 percent  
Inclusion 2: Typic Camborthids, loamy, mixed, mesic, shallow, 4 to 8 percent slopes--5 percent

### *Map Unit Setting*

*Landscape position:* Hills and intermontane basins  
Bedwyr--Landform: Hills; geomorphic position: summit  
Celeton--Landform: Hills; geomorphic position: backslope  
Inclusion 1--Landform: Fan remnants  
Inclusion 2--Landform: Hills; geomorphic position: summit; position on slope: lower

### *Major Component Description*

#### **Bedwyr Series**

*Elevation:* 4,200 to 4,900 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 110 days  
*Texture:* Stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

#### **Celeton Series**

*Elevation:* 4,200 to 4,900 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from diatomite

### *Dominant Present Vegetation*

Bedwyr: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat  
Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
Inclusion 2: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale

### *Ecological Site*

Bedwyr: O27XY018NV  
Celeton: O27XY027NV  
Inclusion 1: O27XY018NV  
Inclusion 2: O27XY018NV

## 802--Bedwyr-Bedzee-Jobpeak association

### *Composition*

#### **Major Components**

Bedwyr very gravelly loam, 15 to 30 percent slopes--50 percent  
Bedzee very stony loam, 15 to 30 percent slopes--20 percent  
Jobpeak very gravelly loam, 50 to 75 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Lithic Xerollic Haplargids, clayey, montmorillonitic, mesic, 4 to 15 percent slopes--7 percent  
Inclusion 2: Rock outcrop--5 percent  
Inclusion 3: Torrifluventic Haploxerolls, loamy-skeletal, mixed, mesic, 4 to 15 percent slopes--3 percent

### *Map Unit Setting*

*Landscape position:* Hills  
Bedwyr--Landform: Hills; geomorphic position: backslope; aspect: south  
Bedzee--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: north  
Jobpeak--Landform: Hills; geomorphic position: backslope; shape of slope: concave  
Inclusion 1--Landform: Hills; geomorphic position: summit  
Inclusion 2--Landform: Hills  
Inclusion 3--Landform: Stream terraces

### *Major Component Description*

#### **Bedwyr Series**

*Elevation:* 4,600 to 5,200 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

#### **Bedzee Series**

*Elevation:* 4,600 to 5,200 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

**Jobpeak Series**

*Elevation:* 4,600 to 5,200 feet  
*Precipitation:* About 11 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

***Dominant Present Vegetation***

Bedwyr: Indian ricegrass, bottlebrush squirreltail, pine bluegrass, shadscale  
 Bedzee: Sandberg bluegrass, Thurber needlegrass, bottlebrush squirreltail  
 Jobpeak: Douglas rabbitbrush, Sandberg bluegrass, Utah juniper, Wyoming big sagebrush  
 Inclusion 1: Sandberg bluegrass, pine bluegrass  
 Inclusion 2: None  
 Inclusion 3: Anderson peachbrush, basin big sagebrush, basin wildrye, western wheatgrass

***Ecological Site***

Bedwyr: 027XY013NV  
 Bedzee: 027XY079NV  
 Jobpeak: 027XY082NV  
 Inclusion 1: 027XY079NV  
 Inclusion 2: none  
 Inclusion 3: 027XY003NV

**820--Aboten-Inmo-Bluewing association*****Composition*****Major Components**

Aboten very gravelly sandy loam, 4 to 8 percent slopes--45 percent  
 Inmo very gravelly sandy loam, moist, 4 to 15 percent slopes--25 percent  
 Bluewing very gravelly loamy sand, 4 to 8 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Bluewing stony sandy loam, 4 to 15 percent slopes--6 percent  
 Inclusion 2: Genegraf very gravelly loam, 4 to 8 percent slopes--6 percent  
 Inclusion 3: Inmo bouldery sandy loam, 4 to 15 percent slopes--3 percent

***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Aboten--Landform: Fan remnants  
 Inmo--Landform: Alluvial fans  
 Bluewing--Landform: Drainageways  
 Inclusion 1--Landform: Drainageways; position on slope: upper  
 Inclusion 2--Landform: Fan remnants; position on slope: lower  
 Inclusion 3--Landform: Alluvial fans; position on slope: upper

***Major Component Description*****Aboten Series**

*Elevation:* 4,500 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 5 percent cobbles; 30 percent gravel  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

**Inmo Series**

*Elevation:* 4,500 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam  
*Drainage class:* Excessively drained  
*Dominant parent material:* Alluvium derived from granitic rocks

**Bluewing Series**

*Elevation:* 4,500 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly loamy sand  
*Drainage class:* Excessively drained  
*Dominant parent material:* Alluvium derived from mixed rocks

***Dominant Present Vegetation***

Aboten: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat  
 Inmo: Anderson wolfberry, Bailey greasewood, Indian ricegrass, Nevada ephedra, bud sagebrush, spiny hopsage  
 Bluewing: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage  
 Inclusion 3: Anderson wolfberry, Bailey greasewood, Indian ricegrass, Nevada ephedra, bud sagebrush, spiny hopsage

***Ecological Site***

Aboten: 027XY018NV  
 Inmo: 029XY016NV  
 Bluewing: 027XY022NV  
 Inclusion 1: 027XY022NV  
 Inclusion 2: 027XY018NV  
 Inclusion 3: 029XY016NV

**830--Corral-Celeton-Bedwyr association****Composition****Major Components**

Corral stony loam, 15 to 50 percent slopes--50 percent

Celeton cobbly sandy loam, 15 to 50 percent slopes--25 percent

Bedwyr stony loam, 4 to 15 percent slopes--10 percent

**Contrasting Inclusions**

Inclusion 1: Puett gravelly loam, 15 to 50 percent slopes--7 percent

Inclusion 2: Bedzee stony loam, 15 to 50 percent slopes--5 percent

Inclusion 3: Xeric Torripsamments, mixed, mesic, 30 to 50 percent slopes--2 percent

Inclusion 4: Rock outcrop--1 percent

**Map Unit Setting**

*Landscape position:* Hills

Corral--Landform: Hills; geomorphic position: backslope; aspect: north

Celeton--Landform: Hills; geomorphic position: backslope; aspect: south

Bedwyr--Landform: Hills; geomorphic position: summit

Inclusion 1--Landform: Hills; geomorphic position: backslope; aspect: north

Inclusion 2--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: north

Inclusion 3--Landform: Dunes

Inclusion 4--Landform: Hills

**Major Component Description****Corral Series**

*Elevation:* 4,400 to 5,200 feet

*Precipitation:* About 8 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 100 days

*Surface rock fragments:* 2 percent stones and boulders; *Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from tuffaceous rocks

**Celeton Series**

*Elevation:* 4,400 to 5,200 feet

*Precipitation:* About 7 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 110 days

*Texture:* Cobbly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from diatomite

**Bedwyr Series**

*Elevation:* 4,400 to 5,200 feet

*Precipitation:* About 7 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 110 days

*Texture:* Stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

**Dominant Present Vegetation**

Corral: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat

Bedwyr: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, Sandberg bluegrass, black sagebrush, needleandthread, shadscale

Inclusion 2: Sandberg bluegrass, Thurber needlegrass, bottlebrush squirreltail

Inclusion 3: Nevada ephedra, Wyoming big sagebrush, fourwing saltbush, needleandthread

Inclusion 4: None

**Ecological Site**

Corral: 027XY007NV

Celeton: 027XY027NV

Bedwyr: 027XY018NV

Inclusion 1: 028BY016NV

Inclusion 2: 027XY079NV

Inclusion 3: 027XY053NV

Inclusion 4: none

**840--Belate-Roca-Cleavage association****Composition****Major Components**

Belate very gravelly loam, 30 to 75 percent slopes--40 percent

Roca very stony loam, 30 to 75 percent slopes--25 percent

Cleavage very gravelly loam, 30 to 75 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Cleavage very gravelly loam, 8 to 30 percent slopes--8 percent

Inclusion 2: Rock outcrop--5 percent

Inclusion 3: Burnborough very stony loam, 50 to 75 percent slopes--1 percent

Inclusion 4: Fluvaquentic Haploxerolls, loamy-skeletal, mixed, frigid, 2 to 8 percent slopes--1 percent

**Map Unit Setting**

*Landscape position:* Mountains

Belate--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Roca--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Cleavage--Landform: Mountains

Inclusion 1--Landform: Drainageways; geomorphic position: summit

Inclusion 2--Landform: Mountains



Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north  
Inclusion 4--Landform: Stream terraces

### **Major Component Description**

#### **Belate Series**

*Elevation:* 6,400 to 8,700 feet  
*Precipitation:* About 12 inches  
*Air temperature:* About 43 degrees  
*Frost-free season:* About 80 days  
*Surface rock fragments:* 2 percent stones and boulders; 5 percent cobbles; 25 percent gravel  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Roca Series**

*Elevation:* 6,400 to 8,700 feet  
*Precipitation:* About 11 inches  
*Air temperature:* About 45 degrees  
*Frost-free season:* About 80 days  
*Surface rock fragments:* 5 percent stones and boulders; 10 percent cobbles; 5 percent gravel  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Cleavage Series**

*Elevation:* 6,400 to 8,700 feet  
*Precipitation:* About 12 inches  
*Air temperature:* About 44 degrees  
*Frost-free season:* About 80 days  
*Surface rock fragments:* 15 percent cobbles; 40 percent gravel  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

### **Dominant Present Vegetation**

Belate: Idaho fescue, Sandberg bluegrass, Thurber needlegrass, low sagebrush, pine bluegrass  
Roca: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass  
Cleavage: Idaho fescue, Sandberg bluegrass, Webber ricegrass, bottlebrush squirreltail, low sagebrush  
Inclusion 1: Idaho fescue, Sandberg bluegrass, Webber ricegrass, bottlebrush squirreltail, low sagebrush  
Inclusion 2: None  
Inclusion 3: Idaho fescue, Nevada bluegrass, Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush  
Inclusion 4: Anderson peachbrush, basin big sagebrush, basin wildrye, western wheatgrass

### **Ecological Site**

Belate: 027XY046NV  
Roca: 024XY028NV

Cleavage: 024XY016NV  
Inclusion 1: 024XY016NV  
Inclusion 2: none  
Inclusion 3: 024XY021NV  
Inclusion 4: 027XY003NV

## **850--Walti-Roca-Belate association**

### **Composition**

#### **Major Components**

Walti very stony loam, 4 to 15 percent slopes--35 percent  
Roca very stony loam, 30 to 50 percent slopes--30 percent  
Belate very gravelly loam, 30 to 50 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent  
Inclusion 2: Burnborough stony loam, 30 to 75 percent slopes--5 percent  
Inclusion 3: Madeline very stony loam, 30 to 75 percent slopes--2 percent  
Inclusion 4: Aridic Argixerolls, loamy-skeletal, mixed, frigid, 8 to 30 percent slopes--2 percent

### **Map Unit Setting**

*Landscape position:* Mountains  
Walti--Landform: Mountains; geomorphic position: summit  
Roca--Landform: Mountains; geomorphic position: backslope; aspect: south  
Belate--Landform: Mountains; geomorphic position: backslope; aspect: north  
Inclusion 1--Landform: Mountains  
Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave; aspect: north  
Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north  
Inclusion 4--Landform: Mountains; geomorphic position: backslope; position on slope: lower

### **Major Component Description**

#### **Walti Series**

*Elevation:* 7,000 to 8,300 feet  
*Precipitation:* About 12 inches  
*Air temperature:* About 45 degrees  
*Frost-free season:* About 80 days  
*Surface rock fragments:* 7 percent stones and boulders; 10 percent cobbles; 10 percent gravel  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Roca Series**

*Elevation:* 7,000 to 8,300 feet  
*Precipitation:* About 12 inches  
*Air temperature:* About 45 degrees  
*Frost-free season:* About 80 days  
*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Belate Series**

*Elevation:* 7,000 to 8,300 feet

*Precipitation:* About 12 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 80 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Dominant Present Vegetation**

Walti: Sandberg bluegrass, Thurber needlegrass, low sagebrush, pine bluegrass

Roca: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass

Belate: Idaho fescue, Sandberg bluegrass, Thurber needlegrass, low sagebrush, pine bluegrass

Inclusion 1: None

Inclusion 2: Idaho fescue, Nevada bluegrass, Thurber needlegrass, bluebunch wheatgrass, mountain big sagebrush

Inclusion 3: Sandberg bluegrass, Thurber needlegrass, basin wildrye, snowberry

Inclusion 4: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

#### **Ecological Site**

Walti: 027XY046NV

Roca: 024XY028NV

Belate: 027XY046NV

Inclusion 1: none

Inclusion 2: 024XY021NV

Inclusion 3: 027XY058NV

Inclusion 4: 027XY007NV

### **860--Teguro-Colbar-Cleavage association**

#### **Composition**

##### **Major Components**

Teguro very stony loam, 30 to 50 percent slopes--40 percent

Colbar very cobbly loam, 30 to 50 percent slopes--30 percent

Cleavage very gravelly loam, 8 to 30 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Rubble land--5 percent

Inclusion 2: Belate stony loam, 30 to 75 percent slopes--4 percent

Inclusion 3: Loomer gravelly loam, 8 to 30 percent slopes--3 percent

Inclusion 4: Jobpeak very gravelly loam, 50 to 75 percent slopes--3 percent

#### **Map Unit Setting**

*Landscape position:* Mountains

Teguro--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Colbar--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Cleavage--Landform: Mountains; geomorphic position: summit

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: convex

Inclusion 3--Landform: Mountains; geomorphic position: summit; position on slope: lower; shape of slope: convex

Inclusion 4--Landform: Mountains; geomorphic position: backslope; aspect: north

#### **Major Component Description**

##### **Teguro Series**

*Elevation:* 6,300 to 8,600 feet

*Precipitation:* About 12 inches

*Air temperature:* About 44 degrees

*Frost-free season:* About 80 days

*Surface rock fragments:* 3 percent stones and boulders; 5 percent cobbles; 15 percent gravel

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

##### **Colbar Series**

*Elevation:* 6,300 to 7,200 feet

*Precipitation:* About 10 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 90 days

*Texture:* Very cobbly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

##### **Cleavage Series**

*Elevation:* 6,300 to 8,600 feet

*Precipitation:* About 12 inches

*Air temperature:* About 44 degrees

*Frost-free season:* About 80 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from volcanic rocks

#### **Dominant Present Vegetation**

Teguro: Douglas rabbitbrush, Sandberg bluegrass, Utah juniper, mountain big sagebrush, singleleaf pinyon

Colbar: Indian ricegrass, Nevada ephedra, Sandberg bluegrass, Wyoming big sagebrush, desert needlegrass

Cleavage: Idaho fescue, Sandberg bluegrass, Webber ricegrass, bottlebrush squirreltail, low sagebrush

Inclusion 1: None

Inclusion 2: Idaho fescue, Sandberg bluegrass, Thurber needlegrass, low sagebrush, pine bluegrass  
 Inclusion 3: Sandberg bluegrass, Thurber needlegrass, spiny hopsage  
 Inclusion 4: Douglas rabbitbrush, Sandberg bluegrass, Utah juniper, Wyoming big sagebrush

### ***Ecological Site***

Teguro: 027XY082NV  
 Colbar: 027XY051NV  
 Cleavage: 024XY016NV  
 Inclusion 1: none  
 Inclusion 2: 027XY046NV  
 Inclusion 3: 027XY079NV  
 Inclusion 4: 027XY082NV

## **870--Chill-Cleavage association**

### ***Composition***

#### **Major Components**

Chill very stony sandy loam, 30 to 50 percent slopes--55 percent  
 Cleavage very stony sandy loam, 30 to 50 percent slopes--30 percent

#### **Contrasting Inclusions**

Inclusion 1: Madeline very stony loam, 8 to 30 percent slopes--7 percent  
 Inclusion 2: Rock outcrop--5 percent  
 Inclusion 3: Budihol stony sandy loam, 30 to 50 percent slopes--3 percent

### ***Map Unit Setting***

**Landscape position:** Mountains  
 Chill--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: concave  
 Cleavage--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: convex  
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave  
 Inclusion 2--Landform: Mountains  
 Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex

### ***Major Component Description***

#### **Chill Series**

**Elevation:** 5,800 to 6,800 feet  
**Precipitation:** About 11 inches  
**Air temperature:** About 46 degrees  
**Frost-free season:** About 100 days  
**Texture:** Very stony sandy loam  
**Drainage class:** Well drained  
**Dominant parent material:** Residuum and colluvium derived from granitic rocks

#### **Cleavage Series**

**Elevation:** 5,800 to 7,200 feet

**Precipitation:** About 12 inches  
**Air temperature:** About 43 degrees  
**Frost-free season:** About 90 days  
**Texture:** Very stony sandy loam  
**Drainage class:** Well drained  
**Dominant parent material:** Residuum derived from volcanic rocks

### ***Dominant Present Vegetation***

Chill: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Cleavage: Idaho fescue, Sandberg bluegrass, Webber ricegrass, bottlebrush squirreltail, low sagebrush  
 Inclusion 1: Sandberg bluegrass, Thurber needlegrass, basin wildrye, snowberry  
 Inclusion 2: None  
 Inclusion 3: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

### ***Ecological Site***

Chill: 027XY007NV  
 Cleavage: 027XY046NV  
 Inclusion 1: 024XY021NV  
 Inclusion 2: none  
 Inclusion 3: 027XY007NV

## **880--Coppereid-Singatse-Findout association**

### ***Composition***

#### **Major Components**

Coppereid gravelly loam, 30 to 75 percent slopes--45 percent  
 Singatse very gravelly loam, 50 to 75 percent slopes--30 percent  
 Findout very gravelly loam, 8 to 30 percent slopes--10 percent

#### **Contrasting Inclusions**

Inclusion 1: Singatse very gravelly loam, 50 to 75 percent slopes--8 percent  
 Inclusion 2: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic, 4 to 15 percent slopes--5 percent  
 Inclusion 3: Old Camp very gravelly loam, 30 to 50 percent slopes--2 percent

### ***Map Unit Setting***

**Landscape position:** Mountains  
 Coppereid--Landform: Mountains; geomorphic position: backslope; aspect: north  
 Singatse--Landform: Mountains; geomorphic position: backslope; aspect: south  
 Findout--Landform: Mountains; geomorphic position: summit; aspect: south  
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: lower  
 Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Mountains; shape of slope: concave; aspect: north

### **Major Component Description**

#### **Coppereid Series**

*Elevation:* 4,400 to 6,400 feet

*Precipitation:* About 8 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 100 days

*Surface rock fragments:* 2 percent cobbles; 30 percent gravel

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from sedimentary rocks

#### **Singatse Series**

*Elevation:* 4,400 to 6,400 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 110 days

*Texture:* Very gravelly loam

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Residuum derived from mixed rocks

#### **Findout Series**

*Elevation:* 4,400 to 6,400 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 100 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from limestone and dolomite

### **Dominant Present Vegetation**

Coppereid: Nevada ephedra, pine bluegrass, spiny hopsage

Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Findout: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, littleleaf horsebrush, shadscale

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 3: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

### **Ecological Site**

Coppereid: 027XY079NV

Singatse: 027XY027NV

Findout: 027XY017NV

Inclusion 1: 027XY019NV

Inclusion 2: 027XY029NV

Inclusion 3: 027XY007NV

## **900--Playas**

### **Composition**

#### **Major Components**

Playas silty clay loam, 0 to 1 percent slopes--100 percent

### **Map Unit Setting**

*Landscape position:* Bolsons

Playas--Landform: Playas

### **Major Component Description**

#### **Playas Miscellaneous Area**

*Elevation:* 3,900 to 4,900 feet

*Texture:* Silty clay loam

## **901--Dune land-Isolde association**

### **Composition**

#### **Major Components**

Dune land fine sand, 4 to 30 percent slopes--50 percent

Isolde fine sand, 4 to 30 percent slopes--40 percent

#### **Contrasting Inclusions**

Inclusion 1: Hawsley sand, 2 to 8 percent slopes--10 percent

### **Map Unit Setting**

*Landscape position:* Intermontane basins

Dune land--Landform: Dunes

Isolde--Landform: Dunes

Inclusion 1--Landform: Sand sheets

### **Major Component Description**

#### **Dune land Miscellaneous Area**

*Elevation:* 3,900 to 4,600 feet

*Texture:* Fine sand

*Drainage class:* Excessively drained

#### **Isolde Series**

*Elevation:* 3,900 to 4,600 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Fine sand

*Drainage class:* Excessively drained

*Dominant parent material:* Eolian sand

### **Dominant Present Vegetation**

Dune land: None

Isolde: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread

Inclusion 1: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat

### **Ecological Site**

Isolde: 027XY023NV

Dune land: None

Inclusion 1: 027XY009NV

**902--Badland****Composition****Major Components**

Badland --100 percent

**Map Unit Setting**

*Landscape position:* Mountains and intermontane basins

Badland--Landform: Scarp slopes

**Major Component Description****Badland Miscellaneous Area**

*Elevation:* 3,900 to 6,900 feet

*Frost-free season:* About 110 days

*Texture:* Gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

**Dominant Present Vegetation**

Badland: None

Rebel: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Yody: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 1: Nevada ephedra, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Inclusion 2: Indian ricegrass, Sandberg bluegrass, black sagebrush, needleandthread, shadscale

Inclusion 3: Utah juniper, Wyoming big sagebrush, antelope bitterbrush, bluebunch wheatgrass, singleleaf pinyon

**903--Badland-Rebel-Yody association****Composition****Major Components**

Badland variable, 1 to 99 percent slopes--35 percent

Rebel loam, 2 to 8 percent slopes--30 percent

Yody gravelly sandy loam, 2 to 8 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Pineval very gravelly loam, 4 to 8 percent slopes--6 percent

Inclusion 2: Puett sandy loam, 30 to 50 percent slopes--5 percent

Inclusion 3: Aridic Argixerolls, loamy, mixed, mesic, shallow, 15 to 30 percent slopes--4 percent

**Map Unit Setting**

*Landscape position:* Hills and intermontane basins

Badland--Landform: Scarp slopes

Rebel--Landform: Inset fans

Yody--Landform: Fan remnants

Inclusion 1--Landform: Alluvial fans

Inclusion 2--Landform: Hills; geomorphic position: backslope

Inclusion 3--Landform: Hills; geomorphic position: backslope; aspect: north

**Major Component Description****Badland Miscellaneous Area**

*Elevation:* 6,400 to 7,100 feet

**Rebel Series**

*Elevation:* 6,400 to 7,100 feet

*Precipitation:* About 8 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Yody Series**

*Elevation:* 6,400 to 7,100 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

**Ecological Site**

Rebel: 027XY008NV

Yody: 027XY008NV

Badland: None

Inclusion 1: 027XY008NV

Inclusion 2: 028BY016NV

Inclusion 3: 027XY081NV

**910--Theriot-Findout-Rock outcrop association****Composition****Major Components**

Theriot very stony loam, 30 to 50 percent slopes--40 percent

Findout very gravelly loam, 30 to 50 percent slopes--25 percent

Rock outcrop--20 percent

**Contrasting Inclusions**

Inclusion 1: Singatse very stony loam, 30 to 75 percent slopes--9 percent

Inclusion 2: Theon gravelly loam, 30 to 50 percent slopes--4 percent

Inclusion 3: Rezave stony loam, 15 to 30 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Hills

Theriot--Landform: Hills; geomorphic position: backslope; position on slope: lower

Findout--Landform: Hills; geomorphic position: backslope; position on slope: upper

Rock outcrop--Landform: Hills

Inclusion 1--Landform: Hills; geomorphic position: backslope; shape of slope: convex

Inclusion 2--Landform: Hills; geomorphic position: backslope; shape of slope: concave

Inclusion 3--Landform: Hills; geomorphic position: summit

### ***Major Component Description***

#### **Theriot Series**

*Elevation:* 5,000 to 5,500 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 130 days

*Surface rock fragments:* 10 percent stones and boulders; 5 percent cobbles; 20 percent gravel

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from limestone and dolomite

#### **Findout Series**

*Elevation:* 5,000 to 5,500 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from limestone and dolomite

#### **Rock outcrop Miscellaneous Area**

*Elevation:* 5,000 to 5,500 feet

### ***Dominant Present Vegetation***

Theriot: Anderson wolfberry, Indian ricegrass, galleta, needlegrass, shadscale, spiny menodora

Findout: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, littleleaf horsebrush, shadscale

Rock outcrop: None

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

### ***Ecological Site***

Theriot: 029XY037NV

Findout: 027XY017NV

Rock outcrop: None

Inclusion 1: 027XY027NV

Inclusion 2: 027XY019NV

Inclusion 3: 027XY019NV

## **930--Layview-Packer-Hapgood association**

### ***Composition***

#### **Major Components**

Layview very gravelly sandy loam, 15 to 30 percent slopes--35 percent

Packer very cobbly loam, 30 to 75 percent slopes--30 percent

Hapgood gravelly loam, 30 to 75 percent slopes--20

percent

### **Contrasting Inclusions**

Inclusion 1: Roca very gravelly loam, 30 to 50 percent slopes--6 percent

Inclusion 2: Rock outcrop--4 percent

Inclusion 3: Itca very stony loam, 15 to 50 percent slopes--3 percent

Inclusion 4: Welch clay loam, 4 to 8 percent slopes--2 percent

### ***Map Unit Setting***

*Landscape position:* Mountains

Layview--Landform: Mountains; geomorphic position: summit

Packer--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Hapgood--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Inclusion 2--Landform: Mountains

Inclusion 3--Landform: Mountains; position on slope: lower; shape of slope: convex

Inclusion 4--Landform: Stream terraces; geomorphic position: footslope

### ***Major Component Description***

#### **Layview Series**

*Elevation:* 7,800 to 9,600 feet

*Precipitation:* About 14 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 60 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Packer Series**

*Elevation:* 7,800 to 9,600 feet

*Precipitation:* About 15 inches

*Air temperature:* About 42 degrees

*Frost-free season:* About 60 days

*Surface rock fragments:* 20 percent cobbles; 20 percent gravel

*Texture:* Very cobbly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Hapgood Series**

*Elevation:* 7,800 to 9,600 feet

*Precipitation:* About 15 inches

*Air temperature:* About 42 degrees

*Frost-free season:* About 60 days

*Surface rock fragments:* 5 percent cobbles; 20 percent gravel

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Colluvium derived from mixed rocks, loess, and volcanic ash

***Dominant Present Vegetation***

Layview: Idaho fescue, Sandberg bluegrass, bluebunch wheatgrass, low sagebrush, pine bluegrass  
 Packer: Idaho fescue, Sandberg bluegrass, low sagebrush  
 Hapgood: Columbia needlegrass, Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, mountain brome  
 Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass  
 Inclusion 2: None  
 Inclusion 3: Idaho fescue, Thurber needlegrass, Utah juniper, mountain big sagebrush, singleleaf pinyon  
 Inclusion 4: Idaho fescue, Nevada bluegrass, rush, sedge, tufted hairgrass

***Ecological Site***

Layview: 024XY016NV  
 Packer: 024XY016NV  
 Hapgood: 024XY032NV  
 Inclusion 1: 024XY028NV  
 Inclusion 2: none  
 Inclusion 3: 027XY082NV  
 Inclusion 4: 027XY004NV

**940--Old Camp-Rubble land association*****Composition*****Major Components**

Old Camp extremely stony loam, 15 to 50 percent slopes--35 percent  
 Old Camp extremely stony loam, 15 to 50 percent slopes--35 percent  
 Rubble land, 0 to 15 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Theon very stony loamy sand, 15 to 50 percent slopes--5 percent  
 Inclusion 2: Pirouette stony loam, 2 to 4 percent slopes--4 percent  
 Inclusion 3: Singatse extremely stony loam, 30 to 75 percent slopes--3 percent  
 Inclusion 4: Olac very cobbly loam, 4 to 30 percent slopes--3 percent

***Map Unit Setting***

*Landscape position:* Mountains  
 Old Camp--Landform: Mountains; aspect: north  
 Old Camp--Landform: Mountains; aspect: south  
 Rubble land--Landform: Mountains  
 Inclusion 1--Landform: Mountains; geomorphic position: footslope; position on slope: lower; aspect: south  
 Inclusion 2--Landform: Mountains; geomorphic position: summit; position on slope: lower  
 Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex  
 Inclusion 4--Landform: Mountains; geomorphic

position: summit; position on slope: upper

***Major Component Description*****Old Camp Series**

*Elevation:* 5,300 to 6,500 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Extremely stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

**Old Camp Series**

*Elevation:* 5,300 to 6,500 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 100 days  
*Texture:* Extremely stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from volcanic rocks

**Rubble land Miscellaneous Area**

*Elevation:* 5,300 to 6,500 feet  
*Drainage class:* Excessively drained

***Dominant Present Vegetation***

Old Camp: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Old Camp: Nevada ephedra, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage  
 Rubble land: None  
 Inclusion 1: Bailey greasewood, Indian ricegrass, desert needlegrass, littleleaf horsebrush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, desert needlegrass, littleleaf horsebrush, shadscale  
 Inclusion 3: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 4: Sandberg bluegrass, bottlebrush squirreltail, needlegrass

***Ecological Site***

Old Camp: 027XY007NV  
 Old Camp: 027XY051NV  
 Rubble land: None  
 Inclusion 1: 027XY017NV  
 Inclusion 2: 027XY019NV  
 Inclusion 3: 027XY027NV  
 Inclusion 4: 027XY079NV

**960--Kolda-Umberland association*****Composition*****Major Components**

Kolda silt loam, 0 to 2 percent slopes--45 percent

Umbreland silty clay loam, 0 to 2 percent slopes--40 percent

**Contrasting Inclusions**

Inclusion 1: Umbreland silty clay loam, 0 to 2 percent slopes--7 percent

Inclusion 2: Parran silty clay loam, 0 to 2 percent slopes--3 percent

Inclusion 3: Playas--3 percent

Inclusion 4: Water--2 percent

**Map Unit Setting**

*Landscape position:* Bolsons

Kolda--Landform: Lake terraces

Umbreland--Landform: Lake terraces

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Lake terraces; position on slope: upper

Inclusion 3--Landform: Playas

Inclusion 4--Landform: Depressions

**Major Component Description**

**Kolda Series**

*Elevation:* 3,800 to 4,000 feet

*Precipitation:* About 8 inches

*Air temperature:* About 47 degrees

*Frost-free season:* About 120 days

*Texture:* Silt loam

*Drainage class:* Very poorly drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

**Umbreland Series**

*Elevation:* 3,800 to 4,000 feet

*Precipitation:* About 7 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Silty clay loam

*Drainage class:* Somewhat poorly drained

*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

**Dominant Present Vegetation**

Kolda: Cattail, creeping spikerush

Umbreland: Alkali bluegrass, inland saltgrass, rush, sedge

Inclusion 1: Baltic rush, alkali sacaton, black greasewood, inland saltgrass

Inclusion 2: Basin wildrye, black greasewood

Inclusion 3: None

Inclusion 4: None

**Ecological Site**

Kolda: 027XY001NV

Umbreland: 027XY069NV

Inclusion 1: 027XY005NV

Inclusion 2: 026XY002NV

Inclusion 3: none

Inclusion 4: none

**970--Jobpeak-Teguro-Rock outcrop association**

**Composition**

**Major Components**

Jobpeak very gravelly loam, 50 to 75 percent slopes--40 percent

Teguro very stony loam, 15 to 50 percent slopes--30 percent

Rock outcrop--15 percent

**Contrasting Inclusions**

Inclusion 1: Hapgood stony loam, 30 to 50 percent slopes--5 percent

Inclusion 2: Singatse very gravelly loam, 30 to 75 percent slopes--4 percent

Inclusion 3: Roca very stony loam, 15 to 50 percent slopes--4 percent

Inclusion 4: Loomer gravelly loam, 8 to 30 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Mountains

Jobpeak--Landform: Mountains; geomorphic position: backslope

Teguro--Landform: Mountains; geomorphic position: backslope; aspect: north

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave; aspect: north

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: lower; aspect: south

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

Inclusion 4--Landform: Mountains; geomorphic position: summit; position on slope: lower; shape of slope: convex

**Major Component Description**

**Jobpeak Series**

*Elevation:* 5,600 to 7,700 feet

*Precipitation:* About 13 inches

*Air temperature:* About 47 degrees

*Frost-free season:* About 90 days

*Surface rock fragments:* 30 percent cobbles; 50 percent gravel

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Teguro Series**

*Elevation:* 6,200 to 7,700 feet

*Precipitation:* About 14 inches

*Air temperature:* About 44 degrees

*Frost-free season:* About 90 days

*Texture:* Very stony loam



*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Rock outcrop Miscellaneous Area**

*Elevation:* 5,600 to 7,700 feet

#### ***Dominant Present Vegetation***

Jobpeak: Sandberg bluegrass, Utah juniper, Wyoming big sagebrush, pine bluegrass, rabbitbrush

Teguro: Douglas rabbitbrush, Sandberg bluegrass, Utah juniper, mountain big sagebrush, singleleaf pinyon

Rock outcrop: None

Inclusion 1: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, snowberry

Inclusion 2: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 3: Thurber needlegrass, Wyoming big sagebrush, basin wildrye, bluebunch wheatgrass, bluegrass

Inclusion 4: Sandberg bluegrass, Thurber needlegrass, spiny hopsage

#### ***Ecological Site***

Jobpeak: 027XY082NV

Teguro: 027XY082NV

Rock outcrop: None

Inclusion 1: 024XY023NV

Inclusion 2: 027XY027NV

Inclusion 3: 024XY028NV

Inclusion 4: 027XY079NV

### **980--Madeline-Millerlux association**

#### ***Composition***

#### **Major Components**

Madeline very stony loam, 8 to 30 percent slopes--55 percent

Millerlux very stony loam, 4 to 15 percent slopes--30 percent

#### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent

Inclusion 2: Pachic Argixerolls, loamy-skeletal, mixed, frigid, 30 to 50 percent slopes--5 percent

Inclusion 3: Aridic Argixerolls, loamy-skeletal, mixed, frigid, 4 to 15 percent slopes--4 percent

#### ***Map Unit Setting***

*Landscape position:* Mountains

Madeline--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Millerlux--Landform: Mountains; geomorphic position: summit; shape of slope: convex

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Inclusion 3--Landform: Stream terraces; geomorphic position: footslope

#### ***Major Component Description***

#### **Madeline Series**

*Elevation:* 6,400 to 7,600 feet

*Precipitation:* About 12 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 90 days

*Surface rock fragments:* 5 percent stones and boulders; 5 percent cobbles

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Millerlux Series**

*Elevation:* 6,400 to 7,600 feet

*Precipitation:* About 12 inches

*Air temperature:* About 43 degrees

*Frost-free season:* About 70 days

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Madeline: Sandberg bluegrass, Thurber needlegrass, basin wildrye, snowberry

Millerlux: Sandberg bluegrass, bottlebrush squirreltail, low sagebrush, rabbitbrush

Inclusion 1: None

Inclusion 2: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, snowberry

Inclusion 3: Anderson peachbrush, basin big sagebrush, basin wildrye, western wheatgrass

#### ***Ecological Site***

Madeline: 027XY058NV

Millerlux: 024XY016NV

Inclusion 1: none

Inclusion 2: 024XY034NV

Inclusion 3: 027XY003NV

### **990--Millerlux-Ninemile-Madeline association**

#### ***Composition***

#### **Major Components**

Millerlux very stony loam, 4 to 15 percent slopes--40 percent

Ninemile very stony loam, 4 to 15 percent slopes--35 percent

Madeline very stony loam, 8 to 30 percent slopes--10 percent

#### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent

Inclusion 2: Xeric Torriorthents, loamy-skeletal, mixed, nonacid, frigid, 4 to 15 percent slopes--5 percent

Inclusion 3: Welch silt loam, 4 to 8 percent slopes--4 percent

#### ***Map Unit Setting***

*Landscape position:* Mountains

Millerlux--Landform: Mountains; geomorphic position: summit; shape of slope: convex  
 Ninemile--Landform: Mountains; geomorphic position: backslope; shape of slope: convex  
 Madeline--Landform: Mountains; geomorphic position: backslope; shape of slope: concave  
 Inclusion 1--Landform: Mountains  
 Inclusion 2--Landform: Mountains; geomorphic position: summit; position on slope: lower  
 Inclusion 3--Landform: Stream terraces; geomorphic position: footslope

### ***Major Component Description***

#### **Millerlux Series**

*Elevation:* 6,400 to 7,600 feet  
*Precipitation:* About 13 inches  
*Air temperature:* About 43 degrees  
*Frost-free season:* About 70 days  
*Surface rock fragments:* 3 percent stones and boulders; 10 percent cobbles; 15 percent gravel  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Ninemile Series**

*Elevation:* 6,400 to 7,600 feet  
*Precipitation:* About 13 inches  
*Air temperature:* About 43 degrees  
*Frost-free season:* About 75 days  
*Surface rock fragments:* 5 percent stones and boulders; 5 percent cobbles; 5 percent gravel  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Madeline Series**

*Elevation:* 6,400 to 7,600 feet  
*Precipitation:* About 12 inches  
*Air temperature:* About 43 degrees  
*Frost-free season:* About 90 days  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### ***Dominant Present Vegetation***

Millerlux: Sandberg bluegrass, bottlebrush squirreltail, low sagebrush  
 Ninemile: Idaho fescue, Sandberg bluegrass, Thurber needlegrass, low sagebrush, pine bluegrass  
 Madeline: Sandberg bluegrass, Thurber needlegrass, basin wildrye, snowberry  
 Inclusion 1: None  
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Idaho fescue, Nevada bluegrass, rush, sedge, tufted hairgrass

### ***Ecological Site***

Millerlux: 024XY016NV

Ninemile: 027XY046NV  
 Madeline: 027XY058NV  
 Inclusion 1: none  
 Inclusion 2: 024XY016NV  
 Inclusion 3: 027XY004NV

## **1000--Stumble loamy sand, 2 to 4 percent slopes**

### ***Composition***

#### **Major Components**

Stumble loamy sand, 2 to 4 percent slopes--90 percent

#### **Contrasting Inclusions**

Inclusion 1: Ragtown silty clay loam, 2 to 4 percent slopes--7 percent  
 Inclusion 2: Isolde fine sand, 4 to 15 percent slopes--3 percent

### ***Map Unit Setting***

*Landscape position:* Intermontane basins  
 Stumble--Landform: Sand sheets  
 Inclusion 1--Landform: Lake terraces  
 Inclusion 2--Landform: Dunes

### ***Major Component Description***

#### **Stumble Series**

*Elevation:* 4,000 to 4,800 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 130 days  
*Texture:* Loamy sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Stumble: Bailey greasewood, Indian ricegrass, fourwing saltbush, needleandthread  
 Inclusion 1: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale  
 Inclusion 2: Indian ricegrass, black greasewood, fourwing saltbush, shadscale

### ***Ecological Site***

Stumble: 027XY009NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY016NV

## **1010--Downeyville-Stewval-Blacktop association**

### ***Composition***

#### **Major Components**

Downeyville very gravelly sandy loam, 15 to 50 percent slopes--40 percent  
 Stewval very gravelly fine sandy loam, 15 to 50 percent slopes--35 percent

Blacktop very gravelly sandy loam, 30 to 75 percent slopes--10 percent

**Contrasting Inclusions**

Inclusion 1: Rock outcrop--7 percent

Inclusion 2: Stewval very gravelly sandy loam, 4 to 15 percent slopes--6 percent

Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Mountains

Downeyville--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Stewval--Landform: Mountains; geomorphic position: backslope; aspect: north

Blacktop--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: summit

Inclusion 3--Landform: Drainageways

**Major Component Description**

**Downeyville Series**

*Elevation:* 5,400 to 5,900 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 140 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Stewval Series**

*Elevation:* 5,500 to 5,900 feet

*Precipitation:* About 8 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 130 days

*Surface rock fragments:* 55 percent gravel

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Blacktop Series**

*Elevation:* 5,400 to 5,900 feet

*Precipitation:* About 7 inches

*Air temperature:* About 53 degrees

*Frost-free season:* About 140 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Dominant Present Vegetation**

Downeyville: Bailey greasewood, Indian ricegrass, Nevada ephedra, bud sagebrush, galleta, shadscale, winterfat

Stewval: Indian ricegrass, Nevada ephedra, black sagebrush, galleta, needlegrass

Blacktop: Bailey greasewood, Indian ricegrass, Nevada dalea, hairy horsebrush, shadscale

Inclusion 1: None

Inclusion 2: Sandberg bluegrass, black sagebrush, low sagebrush, pine bluegrass, shadscale

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

**Ecological Site**

Downeyville: 029XY022NV

Stewval: 029XY014NV

Blacktop: 029XY033NV

Inclusion 1: none

Inclusion 2: 027XY032NV

Inclusion 3: 027XY029NV

**1011--Downeyville-Blacktop association**

**Composition**

**Major Components**

Downeyville very gravelly sandy loam, 8 to 30 percent slopes--70 percent

Blacktop very gravelly sandy loam, 30 to 50 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Rock outcrop--7 percent

Inclusion 2: Unsel very gravelly loam, 4 to 15 percent slopes--3 percent

Inclusion 3: Blacktop very stony loam, 30 to 50 percent slopes--3 percent

Inclusion 4: Izo very gravelly sand, 2 to 15 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Mountains and intermontane basins

Downeyville--Landform: Mountains; geomorphic position: summit; shape of slope: concave

Blacktop--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Fan remnants

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: convex

Inclusion 4--Landform: Drainageways

**Major Component Description**

**Downeyville Series**

*Elevation:* 5,400 to 5,900 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 140 days

*Surface rock fragments:* 5 percent cobbles; 45 percent gravel

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

**Blacktop Series***Elevation:* 5,400 to 5,900 feet*Precipitation:* About 6 inches*Air temperature:* About 53 degrees*Frost-free season:* About 140 days*Surface rock fragments:* 65 percent gravel*Texture:* Very gravelly sandy loam*Drainage class:* Somewhat excessively drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks***Dominant Present Vegetation***

Downeyville: Bailey greasewood, Indian ricegrass, Nevada ephedra, bud sagebrush, galleta, shadscale, winterfat

Blacktop: Bailey greasewood, Indian ricegrass, Nevada dalea, hairy horsebrush, shadscale

Inclusion 1: None

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, galleta, shadscale, winterfat

Inclusion 3: Bailey greasewood, Indian ricegrass, Nevada dalea, hairy horsebrush, shadscale

Inclusion 4: Indian ricegrass, burrobrush, fourwing saltbush, littleleaf horsebrush, rubber rabbitbrush

***Ecological Site***

Downeyville: 029XY022NV

Blacktop: 029XY033NV

Inclusion 1: none

Inclusion 2: 029XY017NV

Inclusion 3: 027XY019NV

Inclusion 4: 029XY041NV

**1012--Downeyville, moist-Downeyville-Blacktop association*****Composition*****Major Components**

Downeyville very stony fine sandy loam, 8 to 30 percent slopes--50 percent

Downeyville very stony fine sandy loam, 15 to 50 percent slopes--20 percent

Blacktop very gravelly sandy loam, 30 to 75 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Old Camp very gravelly loam, 30 to 75 percent slopes--5 percent

Inclusion 2: Downeyville very stony loam, 30 to 75 percent slopes--4 percent

Inclusion 3: Izo very gravelly sand, 2 to 8 percent slopes--3 percent

Inclusion 4: Rock outcrop--3 percent

***Map Unit Setting****Landscape position:* Mountains

Downeyville--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave

Downeyville--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Blacktop--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Inclusion 1--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Mountains

***Major Component Description*****Downeyville Series***Elevation:* 5,400 to 5,900 feet*Precipitation:* About 7 inches*Air temperature:* About 52 degrees*Frost-free season:* About 140 days*Texture:* Very stony fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Downeyville Series***Elevation:* 5,400 to 5,900 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 140 days*Texture:* Very stony fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Blacktop Series***Elevation:* 5,400 to 5,900 feet*Precipitation:* About 7 inches*Air temperature:* About 53 degrees*Frost-free season:* About 140 days*Texture:* Very gravelly sandy loam*Drainage class:* Somewhat excessively drained*Dominant parent material:* Residuum derived from volcanic rocks***Dominant Present Vegetation***

Downeyville: Bailey greasewood, Indian ricegrass, Nevada ephedra, bud sagebrush, galleta, spiny menodora

Downeyville: Bailey greasewood, Indian ricegrass, Nevada ephedra, bud sagebrush, galleta, shadscale, winterfat

Blacktop: Bailey greasewood, Indian ricegrass, Nevada dalea, hairy horsebrush, shadscale

Inclusion 1: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 2: Bailey greasewood, Indian ricegrass, Nevada ephedra, bud sagebrush, desert needlegrass, shadscale

Inclusion 3: Indian ricegrass, burrobrush, fourwing saltbush, littleleaf horsebrush, rubber rabbitbrush

Inclusion 4: None

***Ecological Site***

Downeyville: 029XY037NV

Downeyville: 029XY022NV  
 Blacktop: 029XY033NV  
 Inclusion 1: 027XY007NV  
 Inclusion 2: 027XY019NV  
 Inclusion 3: 029XY041NV  
 Inclusion 4: none

### 1013--Downeyville-Gabbvally association

#### *Composition*

##### **Major Components**

Downeyville very gravelly fine sandy loam, 8 to 30 percent slopes--30 percent  
 Downeyville very gravelly sandy loam, 30 to 50 percent slopes--30 percent  
 Gabbvally very stony loam, 30 to 50 percent slopes--25 percent

##### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--6 percent  
 Inclusion 2: Unsel very gravelly loam, 8 to 15 percent slopes--6 percent  
 Inclusion 3: Stewval very gravelly sandy loam, 8 to 30 percent slopes--3 percent

#### *Map Unit Setting*

*Landscape position:* Mountains and intermontane basins

Downeyville--Landform: Mountains; geomorphic position: backslope; shape of slope: concave  
 Downeyville--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south

Gabbvally--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Fan remnants

Inclusion 3--Landform: Mountains; geomorphic position: summit

#### *Major Component Description*

##### **Downeyville Series**

*Elevation:* 5,400 to 5,900 feet

*Precipitation:* About 7 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Downeyville Series**

*Elevation:* 5,400 to 5,900 feet

*Precipitation:* About 7 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Gabbvally Series**

*Elevation:* 5,600 to 6,000 feet

*Precipitation:* About 8 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 5 percent stones and boulders; 10 percent cobbles; 35 percent gravel

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### *Dominant Present Vegetation*

Downeyville: Bailey greasewood, Indian ricegrass, Nevada ephedra, bud sagebrush, galleta, spiny menodora

Downeyville: Bailey greasewood, Indian ricegrass, Nevada ephedra, bud sagebrush, galleta, shadscale, winterfat

Gabbvally: Indian ricegrass, Wyoming big sagebrush, bottlebrush squirreltail, desert needlegrass

Inclusion 1: None

Inclusion 2: Bailey greasewood, Indian ricegrass, desert needlegrass, galleta, shadscale, spiny menodora

Inclusion 3: Sandberg bluegrass, black sagebrush, low sagebrush, pine bluegrass, shadscale

#### *Ecological Site*

Downeyville: 029XY037NV

Downeyville: 029XY022NV

Gabbvally: 029XY010NV

Inclusion 1: none

Inclusion 2: 029XY036NV

Inclusion 3: 027XY032NV

### 1020--Unsel-Annaw-Izo association

#### *Composition*

##### **Major Components**

Unsel very gravelly fine sandy loam, 2 to 8 percent slopes--55 percent

Annaw gravelly sandy loam, 2 to 8 percent slopes--25 percent

Izo very gravelly sand, 2 to 8 percent slopes--10 percent

##### **Contrasting Inclusions**

Inclusion 1: Unsel very gravelly sandy loam, 8 to 15 percent slopes--8 percent

Inclusion 2: Goldyke very gravelly sandy loam, 4 to 30 percent slopes--2 percent

#### *Map Unit Setting*

*Landscape position:* Fan piedmonts

Unsel--Landform: Fan remnants

Annaw--Landform: Inset fans

Izo--Landform: Drainageways

Inclusion 1--Landform: Fan remnants; geomorphic position: backslope

Inclusion 2--Landform: Pediments

**Major Component Description****Unsel Series***Elevation:* 4,600 to 5,600 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Surface rock fragments:* 45 percent gravel*Texture:* Very gravelly fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Annaw Series***Elevation:* 4,600 to 5,600 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Izo Series***Elevation:* 4,600 to 5,600 feet*Precipitation:* About 6 inches*Air temperature:* About 53 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly sand*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from mixed rocks**Dominant Present Vegetation**

Unsel: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, galleta, shadscale, winterfat

Annaw: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, galleta, shadscale

Izo: Indian ricegrass, burrobrush, fourwing saltbush, littleleaf horsebrush, rubber rabbitbrush

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, galleta, shadscale, winterfat

Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, galleta, shadscale

**Ecological Site**

Unsel: 029XY017NV

Annaw: 029XY017NV

Izo: 029XY041NV

Inclusion 1: 029XY017NV

Inclusion 2: 029XY022NV

**1023--Unsel-Pineval association****Composition****Major Components**

Unsel gravelly loam, 2 to 4 percent slopes--60 percent

Pineval gravelly loam, 2 to 4 percent slopes--30 percent

**Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--5 percent

Inclusion 2: Bundorf very gravelly loam, 2 to 8 percent slopes--5 percent

**Map Unit Setting***Landscape position:* Fan piedmonts

Unsel--Landform: Fan remnants

Pineval--Landform: Fan remnants; position on slope: lower

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Fan remnants; position on slope: upper

**Major Component Description****Unsel Series***Elevation:* 4,500 to 5,000 feet*Precipitation:* About 7 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Pineval Series***Elevation:* 4,500 to 5,000 feet*Precipitation:* About 8 inches*Air temperature:* About 49 degrees*Frost-free season:* About 110 days*Texture:* Gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from volcanic rocks**Dominant Present Vegetation**

Unsel: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, galleta, shadscale, winterfat

Pineval: Indian ricegrass, Wyoming big sagebrush, bottlebrush squirreltail, spiny hopsage

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

**Ecological Site**

Unsel: 029XY017NV

Pineval: 027XY008NV

Inclusion 1: 027XY029NV

Inclusion 2: 029XY017NV

**1024--Unsel-Desatoya-Roic association****Composition****Major Components**

Unsel very gravelly fine sandy loam, 4 to 15 percent slopes--50 percent

Desatoya very gravelly loam, 4 to 15 percent slopes--20 percent

Roic very gravelly loam, 8 to 30 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Annaw very gravelly loam, 2 to 8 percent slopes--8 percent

Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--4 percent

Inclusion 3: Pineval very gravelly loam, 4 to 8 percent slopes--3 percent

#### **Map Unit Setting**

*Landscape position:* Hills and intermontane basins

Unsel--Landform: Fan remnants; position on slope: lower

Desatoya--Landform: Fan remnants; position on slope: upper

Roic--Landform: Hills; geomorphic position: backslope

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower

#### **Major Component Description**

##### **Unsel Series**

*Elevation:* 5,600 to 5,900 feet

*Precipitation:* About 7 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

##### **Desatoya Series**

*Elevation:* 5,600 to 5,900 feet

*Precipitation:* About 8 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 110 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

##### **Roic Series**

*Elevation:* 5,600 to 5,900 feet

*Precipitation:* About 6 inches

*Air temperature:* About 53 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from sedimentary rocks

#### **Dominant Present Vegetation**

Unsel: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, galleta, shadscale, winterfat

Desatoya: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, low sagebrush, pine bluegrass, shadscale

Roic: Bailey greasewood, Cooper wolfberry, Indian ricegrass, bottlebrush squirreltail, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, galleta, shadscale

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

Inclusion 3: Wyoming big sagebrush, bottlebrush squirreltail, spiny hopsage

#### **Ecological Site**

Unsel: 029XY017NV

Desatoya: 027XY032NV

Roic: 027XY043NV

Inclusion 1: 029XY017NV

Inclusion 2: 027XY029NV

Inclusion 3: 027XY008NV

### **1025--Unsel-Desatoya-Pineval association**

#### **Composition**

##### **Major Components**

Unsel gravelly loam, 2 to 8 percent slopes--45 percent

Desatoya very gravelly loam, 4 to 15 percent slopes--30 percent

Pineval gravelly loam, 2 to 8 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--6 percent

Inclusion 2: Bundorf very gravelly loam, 4 to 8 percent slopes--4 percent

#### **Map Unit Setting**

*Landscape position:* Fan piedmonts

Unsel--Landform: Fan remnants

Desatoya--Landform: Fan remnants; position on slope: upper

Pineval--Landform: Fan remnants; geomorphic position: backslope

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Fan remnants; position on slope: upper

#### **Major Component Description**

##### **Unsel Series**

*Elevation:* 5,600 to 6,000 feet

*Precipitation:* About 8 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

##### **Desatoya Series**

*Elevation:* 6,000 to 6,400 feet

*Precipitation:* About 9 inches

*Air temperature:* About 47 degrees

*Frost-free season:* About 100 days  
*Texture:* Very gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Pineval Series**

*Elevation:* 6,000 to 6,400 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Unsel: Bailey greasewood, Indian ricegrass, galleta, shadscale, winterfat  
 Desatoya: Sandberg bluegrass, black sagebrush, bottlebrush squirreltail, low sagebrush, pine bluegrass, shadscale  
 Pineval: Indian ricegrass, Wyoming big sagebrush, bottlebrush squirreltail, spiny hopsage  
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### ***Ecological Site***

Unsel: 029XY017NV  
 Desatoya: 027XY032NV  
 Pineval: 027XY008NV  
 Inclusion 1: 027XY029NV  
 Inclusion 2: 029XY017NV

### **1026--Unsel-Pineval-Defler association**

#### ***Composition***

##### **Major Components**

Unsel very gravelly fine sandy loam, 2 to 8 percent slopes--40 percent  
 Pineval gravelly loam, 2 to 8 percent slopes--30 percent  
 Defler gravelly fine sandy loam, 2 to 4 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Xerollic Camborthids, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--9 percent  
 Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--4 percent  
 Inclusion 3: Dun Glen gravelly loam, 2 to 4 percent slopes--2 percent

#### ***Map Unit Setting***

*Landscape position:* Fan piedmonts  
 Unsel--Landform: Fan remnants; position on slope: upper  
 Pineval--Landform: Fan remnants; position on slope: lower

Defler--Landform: Inset fans  
 Inclusion 1--Landform: Inset fans; position on slope: upper  
 Inclusion 2--Landform: Drainageways  
 Inclusion 3--Landform: Inset fans; position on slope: lower

#### ***Major Component Description***

##### **Unsel Series**

*Elevation:* 5,600 to 6,000 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

##### **Pineval Series**

*Elevation:* 5,900 to 6,400 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 49 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from volcanic rocks

##### **Defler Series**

*Elevation:* 5,900 to 6,400 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 47 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### ***Dominant Present Vegetation***

Unsel: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, galleta, shadscale, winterfat  
 Pineval: Indian ricegrass, Wyoming big sagebrush, bottlebrush squirreltail, spiny hopsage  
 Defler: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, needleandthread, winterfat  
 Inclusion 1: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage  
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage, winterfat

#### ***Ecological Site***

Unsel: 029XY017NV  
 Pineval: 027XY008NV  
 Defler: 027XY014NV  
 Inclusion 1: 027XY008NV  
 Inclusion 2: 027XY029NV  
 Inclusion 3: 027XY013NV



**1027--Unsel-Roic-Annaw association*****Composition*****Major Components**

Unsel very gravelly fine sandy loam, 4 to 8 percent slopes--40 percent

Roic very gravelly fine sandy loam, 8 to 15 percent slopes--25 percent

Annaw very gravelly loamy sand, 2 to 8 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Mazuma silt loam, 0 to 4 percent slopes--6 percent

Inclusion 2: Bluewing very gravelly loamy sand, 2 to 8 percent slopes--5 percent

Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--4 percent

***Map Unit Setting***

*Landscape position:* Hills and intermontane basins

Unsel--Landform: Fan remnants; geomorphic position: summit

Roic--Landform: Hills; geomorphic position: backslope

Annaw--Landform: Inset fans

Inclusion 1--Landform: Lake terraces

Inclusion 2--Landform: Drainageways; position on slope: lower

Inclusion 3--Landform: Dunes; position on slope: upper

***Major Component Description*****Unsel Series**

*Elevation:* 4,800 to 5,900 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

**Roic Series**

*Elevation:* 4,800 to 5,900 feet

*Precipitation:* About 6 inches

*Air temperature:* About 53 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from sedimentary rocks

**Annaw Series**

*Elevation:* 4,800 to 5,300 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 130 days

*Texture:* Very gravelly loamy sand

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from

mixed rocks

***Dominant Present Vegetation***

Unsel: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, galleta, shadscale, winterfat

Roic: Bailey greasewood, Cooper wolfberry, Indian ricegrass, bottlebrush squirreltail, shadscale

Annaw: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, galleta, shadscale

Inclusion 1: Alkali sacaton, black greasewood, inland saltgrass, shadscale

Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

***Ecological Site***

Unsel: 029XY017NV

Roic: 027XY043NV

Annaw: 029XY017NV

Inclusion 1: 027XY025NV

Inclusion 2: 027XY022NV

Inclusion 3: 027XY029NV

**1030--Goldyke-Blacktop-Koyen association*****Composition*****Major Components**

Goldyke gravelly sandy loam, 8 to 30 percent slopes--55 percent

Blacktop very gravelly sandy loam, 30 to 75 percent slopes--20 percent

Koyen fine sandy loam, 2 to 8 percent slopes--10 percent

**Contrasting Inclusions**

Inclusion 1: Typic Haplargids, fine-loamy, mixed, mesic, 2 to 8 percent slopes--5 percent

Inclusion 2: Unsel gravelly loam, 8 to 30 percent slopes--4 percent

Inclusion 3: Rock outcrop--4 percent

Inclusion 4: Xeric Torriorthents, sandy-skeletal, mixed, mesic, 2 to 8 percent slopes--2 percent

***Map Unit Setting***

*Landscape position:* Hills and intermontane basins

Goldyke--Landform: Hills; geomorphic position: backslope

Blacktop--Landform: Hills; geomorphic position: backslope

Koyen--Landform: Alluvial fans

Inclusion 1--Landform: Fan remnants; geomorphic position: summit

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Inclusion 3--Landform: Hills

Inclusion 4--Landform: Drainageways

**Major Component Description****Goldyke Series***Elevation:* 5,700 to 6,000 feet*Precipitation:* About 6 inches*Air temperature:* About 51 degrees*Frost-free season:* About 130 days*Surface rock fragments:* 2 percent cobbles; 30 percent gravel*Texture:* Gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Blacktop Series***Elevation:* 5,800 to 6,100 feet*Precipitation:* About 7 inches*Air temperature:* About 53 degrees*Frost-free season:* About 140 days*Surface rock fragments:* 65 percent gravel*Texture:* Very gravelly sandy loam*Drainage class:* Somewhat excessively drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Koyen Series***Elevation:* 5,700 to 6,000 feet*Precipitation:* About 6 inches*Air temperature:* About 53 degrees*Frost-free season:* About 130 days*Texture:* Fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from volcanic rocks**Dominant Present Vegetation**

Goldyke: Bailey greasewood, Indian ricegrass, bud sagebrush, galleta, shadscale

Blacktop: Bailey greasewood, Indian ricegrass, Nevada dalea, hairy horsebrush, shadscale

Koyen: Indian ricegrass, bud sagebrush, galleta, spiny hopsage, winterfat

Inclusion 1: Bailey greasewood, bottlebrush squirreltail, bud sagebrush, desert needlegrass, galleta, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, galleta, shadscale, winterfat

Inclusion 3: None

Inclusion 4: Indian ricegrass, Wyoming big sagebrush, galleta, rubber rabbitbrush, spiny hopsage

**Ecological Site**

Goldyke: 029XY022NV

Blacktop: 029XY033NV

Koyen: 029XY046NV

Inclusion 1: 029XY017NV

Inclusion 2: 029XY017NV

Inclusion 3: none

Inclusion 4: 027XY029NV

**1040--Terlco-Annaw-Izo association****Composition****Major Components**

Terlco very gravelly fine sandy loam, 2 to 8 percent slopes--50 percent

Annaw very gravelly loamy sand, 2 to 8 percent slopes--25 percent

Izo very gravelly sand, 2 to 4 percent slopes--15 percent

**Contrasting Inclusions**

Inclusion 1: Singatse very gravelly loam, 4 to 15 percent slopes--6 percent

Inclusion 2: Goldyke very gravelly loam, 4 to 15 percent slopes--4 percent

**Map Unit Setting***Landscape position:* Hills and intermontane basins

Terlco--Landform: Fan remnants; geomorphic position: summit

Annaw--Landform: Inset fans

Izo--Landform: Drainageways

Inclusion 1--Landform: Hills; geomorphic position: backslope

Inclusion 2--Landform: Hills

**Major Component Description****Terlco Series***Elevation:* 4,700 to 5,300 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 130 days*Surface rock fragments:* 40 percent gravel*Texture:* Very gravelly fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Annaw Series***Elevation:* 4,400 to 5,300 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 130 days*Surface rock fragments:* 80 percent gravel*Texture:* Very gravelly loamy sand*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Izo Series***Elevation:* 4,400 to 5,300 feet*Precipitation:* About 6 inches*Air temperature:* About 53 degrees*Frost-free season:* About 120 days*Surface rock fragments:* 5 percent cobbles; 50 percent gravel*Texture:* Very gravelly sand*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from mixed rocks

**Dominant Present Vegetation**

Terlco: Bailey greasewood, Indian ricegrass, Nevada  
 ephedra, bud sagebrush, galleta, spiny menodora  
 Annaw: Bailey greasewood, Indian ricegrass, bud  
 sagebrush, desert needlegrass, galleta,  
 shadscale, spiny menodora  
 Izo: Indian ricegrass, burrobrush, fourwing saltbush,  
 littleleaf horsebrush, rubber rabbitbrush  
 Inclusion 1: Sandberg bluegrass, bud sagebrush,  
 shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass,  
 bud sagebrush, galleta, shadscale

**Ecological Site**

Terlco: 029XY036NV  
 Annaw: 029XY036NV  
 Izo: 029XY041NV  
 Inclusion 1: 027XY027NV  
 Inclusion 2: 029XY022NV

**1050--Ceejay-Olac-Rock outcrop association****Composition****Major Components**

Ceejay very stony loam, 4 to 30 percent slopes--40  
 percent

Olac very stony sandy loam, 15 to 50 percent  
 slopes--30 percent

Rock outcrop--15 percent

**Contrasting Inclusions**

Inclusion 1: Old Camp stony loam, 15 to 50 percent  
 slopes--8 percent

Inclusion 2: Rubble land--4 percent

Inclusion 3: Pirouette very cobbly sandy loam, 4 to  
 15 percent slopes--3 percent

**Map Unit Setting**

*Landscape position:* Hills

Ceejay--Landform: Hills; geomorphic position:  
 summit

Olac--Landform: Hills; geomorphic position:  
 backslope; shape of slope: convex

Rock outcrop--Landform: Hills

Inclusion 1--Landform: Hills; geomorphic position:  
 backslope; shape of slope: concave

Inclusion 2--Landform: Hills

Inclusion 3--Landform: Hills; geomorphic position:  
 summit; position on slope: lower

**Major Component Description****Ceejay Series**

*Elevation:* 4,900 to 5,300 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 100 days

*Surface rock fragments:* 10 percent cobbles; 40  
 percent gravel

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium  
 derived from volcanic rocks

**Olac Series**

*Elevation:* 4,900 to 5,300 feet

*Precipitation:* About 9 inches

*Air temperature:* About 48 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 10 percent cobbles; 15  
 percent gravel

*Texture:* Very stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium  
 derived from volcanic rocks

**Rock outcrop Miscellaneous Area**

*Elevation:* 4,900 to 5,300 feet

**Dominant Present Vegetation**

Ceejay: Sandberg bluegrass, Thurber needlegrass,  
 desert needlegrass

Olac: Sandberg bluegrass, bottlebrush squirreltail,  
 needlegrass

Rock outcrop: None

Inclusion 1: Indian ricegrass, Sandberg bluegrass,  
 Thurber needlegrass, Wyoming big sagebrush,  
 spiny hopsage

Inclusion 2: None

Inclusion 3: Bailey greasewood, bud sagebrush,  
 shadscale

**Ecological Site**

Ceejay: 027XY079NV

Olac: 027XY079NV

Rock outcrop: None

Inclusion 1: 027XY007NV

Inclusion 2: none

Inclusion 3: 027XY018NV

**1061--Olac-Theon-Pirouette association****Composition****Major Components**

Olac very stony loam, 15 to 50 percent slopes--30  
 percent

Theon very stony loam, 15 to 50 percent slopes--30  
 percent

Pirouette very stony very fine sandy loam, 15 to 30  
 percent slopes--25 percent

**Contrasting Inclusions**

Inclusion 1: Singatse very stony sandy loam, 30 to  
 75 percent slopes--8 percent

Inclusion 2: Cleaver very cobbly loam, 4 to 15  
 percent slopes--5 percent

Inclusion 3: Rock outcrop--2 percent

**Map Unit Setting**

*Landscape position:* Hills and intermontane basins

Olac--Landform: Hills; geomorphic position:  
 backslope; position on slope: upper; shape of  
 slope: convex

Theon--Landform: Hills; geomorphic position:  
 backslope; position on slope: lower

Pirouette--Landform: Hills; geomorphic position:  
 summit; position on slope: lower  
 Inclusion 1--Landform: Hills; geomorphic position:  
 backslope; shape of slope: convex  
 Inclusion 2--Landform: Fan remnants  
 Inclusion 3--Landform: Hills

### ***Major Component Description***

#### **Olac Series**

*Elevation:* 4,900 to 5,300 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 10 percent cobbles; 30 percent gravel  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Theon Series**

*Elevation:* 4,900 to 5,200 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 15 percent cobbles; 30 percent gravel  
*Texture:* Very stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Pirouette Series**

*Elevation:* 4,900 to 5,300 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 15 percent cobbles; 20 percent gravel  
*Texture:* Very stony very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### ***Dominant Present Vegetation***

Olac: Sandberg bluegrass, bottlebrush squirreltail, needlegrass  
 Theon: Bailey greasewood, Indian ricegrass, desert needlegrass, littleleaf horsebrush, shadscale  
 Pirouette: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 3: None

### ***Ecological Site***

Olac: 027XY079NV  
 Theon: 027XY019NV  
 Pirouette: 027XY018NV  
 Inclusion 1: 027XY027NV  
 Inclusion 2: 027XY018NV

Inclusion 3: none

## **1062--Olac-Old Camp-Ceejay association**

### ***Composition***

#### **Major Components**

Olac extremely stony loam, 15 to 50 percent slopes--40 percent  
 Old Camp very stony sandy loam, 15 to 50 percent slopes--25 percent  
 Ceejay very stony loam, 4 to 30 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Pirouette very stony fine sandy loam, 4 to 15 percent slopes--8 percent  
 Inclusion 2: Singatse very stony loam, 15 to 50 percent slopes--4 percent  
 Inclusion 3: Rock outcrop--3 percent

### ***Map Unit Setting***

*Landscape position:* Hills  
 Olac--Landform: Hills; geomorphic position:  
 backslope; shape of slope: convex  
 Old Camp--Landform: Hills; geomorphic position:  
 backslope; shape of slope: concave  
 Ceejay--Landform: Hills; geomorphic position:  
 summit  
 Inclusion 1--Landform: Hills; geomorphic position:  
 summit; position on slope: lower  
 Inclusion 2--Landform: Hills; geomorphic position:  
 backslope; position on slope: lower  
 Inclusion 3--Landform: Hills

### ***Major Component Description***

#### **Olac Series**

*Elevation:* 5,900 to 6,800 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 48 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 20 percent cobbles; 35 percent gravel  
*Texture:* Extremely stony loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Old Camp Series**

*Elevation:* 5,900 to 6,800 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 10 percent cobbles; 25 percent gravel  
*Texture:* Very stony sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Ceejay Series**

*Elevation:* 5,900 to 6,800 feet  
*Precipitation:* About 8 inches  
*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### ***Dominant Present Vegetation***

Olac: Sandberg bluegrass, bottlebrush squirreltail, needlegrass

Old Camp: Nevada ephedra, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Ceejay: Sandberg bluegrass, Thurber needlegrass, desert needlegrass

Inclusion 1: Bailey greasewood, bud sagebrush, shadscale

Inclusion 2: Bailey greasewood, bud sagebrush, shadscale

Inclusion 3: None

#### ***Ecological Site***

Olac: 027XY079NV

Old Camp: 027XY051NV

Ceejay: 027XY079NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY027NV

Inclusion 3: none

### **1071--Ganaflan-Bluewing-Trocken association**

#### ***Composition***

##### **Major Components**

Ganaflan gravelly loam, 2 to 4 percent slopes--60 percent

Bluewing very gravelly sandy loam, 2 to 4 percent slopes--20 percent

Trocken very gravelly sandy loam, 2 to 4 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--5 percent

#### ***Map Unit Setting***

*Landscape position:* Intermontane basins

Ganaflan--Landform: Lake terraces

Bluewing--Landform: Inset fans; position on slope: lower

Trocken--Landform: Inset fans; position on slope: upper

Inclusion 1--Landform: Drainageways

#### ***Major Component Description***

##### **Ganaflan Series**

*Elevation:* 4,000 to 4,200 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 10 percent cobbles; 70 percent gravel

*Texture:* Gravelly loam

*Drainage class:* Well drained

*Dominant parent material:* Lacustrine sediments derived from mixed rocks and tufa deposits

#### **Bluewing Series**

*Elevation:* 4,000 to 4,300 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 15 percent cobbles; 40 percent gravel

*Texture:* Very gravelly sandy loam

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### **Trocken Series**

*Elevation:* 4,000 to 4,300 feet

*Precipitation:* About 6 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 10 percent cobbles; 40 percent gravel

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Ganaflan: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Bluewing: Bailey greasewood, Cooper wolfberry, Indian ricegrass, shadscale

Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Ganaflan: 027XY018NV

Bluewing: 027XY043NV

Trocken: 027XY050NV

Inclusion 1: 027XY022NV

### **1090--Umberland-Isolde association**

#### ***Composition***

##### **Major Components**

Umberland silty clay loam, 0 to 2 percent slopes--60 percent

Isolde fine sand, 2 to 15 percent slopes--25 percent

##### **Contrasting Inclusions**

Inclusion 1: Playas--9 percent

Inclusion 2: Parran silty clay loam, 0 to 2 percent slopes--6 percent

#### ***Map Unit Setting***

*Landscape position:* Bolsons

Umberland--Landform: Drainageways

Isolde--Landform: Dunes

Inclusion 1--Landform: Playas

## Inclusion 2--Landform: Lake terraces

**Major Component Description****Umberland Series***Elevation:* 3,900 to 4,400 feet*Precipitation:* About 6 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Silty clay loam*Drainage class:* Somewhat poorly drained*Dominant parent material:* Lacustrine sediments derived from volcanic rocks**Isolde Series***Elevation:* 3,900 to 4,400 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Fine sand*Drainage class:* Excessively drained*Dominant parent material:* Eolian sand**Dominant Present Vegetation**

Umberland: Alkali sacaton, basin wildrye, black greasewood, iodinebush

Isolde: Indian ricegrass, black greasewood, fourwing saltbush, shadscale

Inclusion 1: None

Inclusion 2: Alkali sacaton, alkali seepweed, basin wildrye, black greasewood, inland saltgrass

**Ecological Site**

Umberland: 024XY010NV

Isolde: 027XY016NV

Inclusion 1: none

Inclusion 2: 027XY025NV

**1100--Theon-Olac association****Composition****Major Components**

Theon stony sandy loam, 15 to 50 percent slopes--55 percent

Olac very stony sandy loam, 15 to 50 percent slopes--30 percent

**Contrasting Inclusions**

Inclusion 1: Singatse very gravelly sandy loam, 30 to 50 percent slopes--5 percent

Inclusion 2: Rock outcrop--5 percent

Inclusion 3: Rubble land--5 percent

**Map Unit Setting***Landscape position:* Mountains and foothills

Theon--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

Olac--Landform: Mountains; geomorphic position: backslope; aspect: north

Inclusion 1--Landform: Mountains; geomorphic position: backslope; aspect: south

Inclusion 2--Landform: Mountains

## Inclusion 3--Landform: Mountains

**Major Component Description****Theon Series***Elevation:* 5,900 to 6,800 feet*Precipitation:* About 7 inches*Air temperature:* About 50 degrees*Frost-free season:* About 110 days*Surface rock fragments:* 15 percent cobbles; 10 percent gravel*Texture:* Stony sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Olac Series***Elevation:* 5,900 to 6,800 feet*Precipitation:* About 9 inches*Air temperature:* About 48 degrees*Frost-free season:* About 110 days*Texture:* Very stony sandy loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Dominant Present Vegetation**

Theon: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, desert needlegrass, littleleaf horsebrush, shadscale

Olac: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, spiny hopsage

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: None

Inclusion 3: None

**Ecological Site**

Theon: 027XY017NV

Olac: 027XY079NV

Inclusion 1: 027XY027NV

Inclusion 2: none

Inclusion 3: none

**1101--Theon association, steep****Composition****Major Components**

Theon very stony fine sandy loam, 30 to 50 percent slopes--65 percent

Theon very stony loam, 30 to 50 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Singatse, 30 to 75 percent slopes--7 percent

Inclusion 2: Trocken very gravelly loam, 2 to 4 percent slopes--5 percent

Inclusion 3: Rock outcrop--3 percent

**Map Unit Setting***Landscape position:* Mountains and intermontane basins

Theon--Landform: Hills; geomorphic position: backslope; position on slope: upper; aspect: south

Theon--Landform: Hills; geomorphic position: backslope; position on slope: upper

Inclusion 1--Landform: Hills; geomorphic position: backslope; shape of slope: convex

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Inclusion 3--Landform: Hills

### ***Major Component Description***

#### **Theon Series**

*Elevation:* 4,600 to 5,900 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Very stony fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Theon Series**

*Elevation:* 4,600 to 5,900 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### ***Dominant Present Vegetation***

Theon: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, desert needlegrass, littleleaf horsebrush, shadscale

Theon: Bailey greasewood, Indian ricegrass, littleleaf horsebrush, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, desert needlegrass, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale

Inclusion 3: None

### ***Ecological Site***

Theon: 027XY017NV

Theon: 027XY019NV

Inclusion 1: 027XY027NV

Inclusion 2: 027XY018NV

Inclusion 3: none

## **1102--Theon association**

### ***Composition***

#### **Major Components**

Theon stony sandy loam, 8 to 30 percent slopes--55 percent

Theon very gravelly sandy loam, 8 to 30 percent slopes--30 percent

### **Contrasting Inclusions**

Inclusion 1: Singatse very gravelly sandy loam, 30 to 75 percent slopes--7 percent

Inclusion 2: Trocken gravelly sandy loam, 4 to 15 percent slopes--6 percent

Inclusion 3: Rock outcrop--2 percent

### ***Map Unit Setting***

*Landscape position:* Mountains and intermontane basins

Theon--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Theon--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: south

Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Inclusion 2--Landform: Beach terraces

Inclusion 3--Landform: Mountains

### ***Major Component Description***

#### **Theon Series**

*Elevation:* 4,900 to 5,700 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Theon Series**

*Elevation:* 4,900 to 5,700 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### ***Dominant Present Vegetation***

Theon: Bailey greasewood, bud sagebrush, desert needlegrass, shadscale

Theon: Bailey greasewood, bud sagebrush, desert needlegrass, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, desert needlegrass, shadscale, winterfat

Inclusion 2: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale

Inclusion 3: None

### ***Ecological Site***

Theon: 027XY019NV

Theon: 027XY017NV

Inclusion 1: 027XY027NV

Inclusion 2: 027XY018NV  
Inclusion 3: none

## 1104--Theon-Roic-Singatse association

### *Composition*

#### **Major Components**

Theon stony sandy loam, 30 to 50 percent slopes--30 percent  
Roic very gravelly fine sandy loam, 15 to 30 percent slopes--30 percent  
Singatse very gravelly sandy loam, 30 to 50 percent slopes--25 percent

#### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--8 percent  
Inclusion 2: Celeton very gravelly sandy loam, 15 to 50 percent slopes--4 percent  
Inclusion 3: Trocken very gravelly loam, 2 to 8 percent slopes--3 percent

### *Map Unit Setting*

*Landscape position:* Mountains and intermontane basins

Theon--Landform: Hills; geomorphic position: backslope

Roic--Landform: Hills; geomorphic position: backslope

Singatse--Landform: Hills; geomorphic position: backslope; shape of slope: convex

Inclusion 1--Landform: Hills

Inclusion 2--Landform: Hills; position on slope: lower

Inclusion 3--Landform: Beach terraces

### *Major Component Description*

#### **Theon Series**

*Elevation:* 4,900 to 5,500 feet

*Precipitation:* About 7 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Stony sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

#### **Roic Series**

*Elevation:* 4,900 to 5,500 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

#### **Singatse Series**

*Elevation:* 4,900 to 5,400 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

### *Dominant Present Vegetation*

Theon: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, desert needlegrass, littleleaf horsebrush, shadscale

Roic: Bailey greasewood, Cooper wolfberry, Nevada dalea, bud sagebrush, littleleaf horsebrush, shadscale

Singatse: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale

Inclusion 1: None

Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat

Inclusion 3: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, shadscale

### *Ecological Site*

Theon: 027XY019NV

Roic: 027XY027NV

Singatse: 027XY027NV

Inclusion 1: none

Inclusion 2: 027XY027NV

Inclusion 3: 027XY018NV

## 1120--Patna-Hawsley-Juva association

### *Composition*

#### **Major Components**

Patna sand, 0 to 4 percent slopes--50 percent

Hawsley sand, 0 to 4 percent slopes--20 percent

Juva gravelly fine sandy loam, 0 to 4 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Bluewing very gravelly sand, 2 to 4 percent slopes--6 percent

Inclusion 2: Appian gravelly sandy loam, 2 to 8 percent slopes--6 percent

Inclusion 3: Mazuma gravelly sandy loam, 2 to 4 percent slopes--3 percent

### *Map Unit Setting*

*Landscape position:* Bolsons

Patna--Landform: Lake terraces; position on slope: upper

Hawsley--Landform: Sand sheets

Juva--Landform: Lake terraces; position on slope: lower

Inclusion 1--Landform: Drainageways; position on slope: upper

Inclusion 2--Landform: Beach terraces; position on slope: upper

Inclusion 3--Landform: Beach terraces; position on slope: lower

### *Major Component Description*

#### **Patna Series**

*Elevation:* 4,200 to 4,800 feet



*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Eolian material over lacustrine sediments

#### **Hawsley Series**

*Elevation:* 4,200 to 4,800 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Water re-worked eolian sand

#### **Juva Series**

*Elevation:* 4,200 to 4,800 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Dominant Present Vegetation**

Patna: Bailey greasewood, Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread  
Hawsley: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat  
Juva: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### **Ecological Site**

Patna: 027XY009NV  
Hawsley: 027XY009NV  
Juva: 027XY018NV  
Inclusion 1: 027XY022NV  
Inclusion 2: 027XY018NV  
Inclusion 3: 027XY018NV

### **1121--Patna sand, 0 to 4 percent slopes**

#### **Composition**

##### **Major Components**

Patna sand, 0 to 4 percent slopes--85 percent

##### **Contrasting Inclusions**

Inclusion 1: Isalde fine sand, 4 to 15 percent slopes--10 percent  
Inclusion 2: Yerington sand, 0 to 2 percent slopes--5 percent

#### **Map Unit Setting**

*Landscape position:* Intermontane basins  
Patna--Landform: Lake terraces  
Inclusion 1--Landform: Dunes  
Inclusion 2--Landform: Lake terraces; position on slope: lower

#### **Major Component Description**

##### **Patna Series**

*Elevation:* 4,100 to 4,600 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Eolian material over lacustrine sediments

#### **Dominant Present Vegetation**

Patna: Bailey greasewood, Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread  
Inclusion 1: Indian ricegrass, Nevada dalea, fourwing saltbush, hairy horsebrush, needleandthread  
Inclusion 2: Bailey greasewood, Indian ricegrass, fourwing saltbush, low rabbitbrush, winterfat

#### **Ecological Site**

Patna: 027XY009NV  
Inclusion 1: 027XY023NV  
Inclusion 2: 027XY009NV

### **1130--Malpais complex**

#### **Composition**

##### **Major Components**

Malpais gravelly sandy loam, 2 to 8 percent slopes--60 percent  
Malpais stony sandy loam, 4 to 15 percent slopes--30 percent

##### **Contrasting Inclusions**

Inclusion 1: Stumble fine sand, 0 to 4 percent slopes--4 percent  
Inclusion 2: Bango gravelly sandy loam, 2 to 4 percent slopes--4 percent  
Inclusion 3: Trocken gravelly sandy loam, 2 to 4 percent slopes--2 percent

#### **Map Unit Setting**

*Landscape position:* Fan piedmonts  
Malpais--Landform: Alluvial fans  
Malpais--Landform: Alluvial fans  
Inclusion 1--Landform: Sand sheets  
Inclusion 2--Landform: Fan remnants; geomorphic position: summit; position on slope: lower  
Inclusion 3--Landform: Beach terraces; position on slope: lower

#### **Major Component Description**

##### **Malpais Series**

*Elevation:* 5,000 to 5,600 feet

*Precipitation:* About 7 inches  
*Air temperature:* About 45 degrees  
*Frost-free season:* About 110 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium and colluvium derived from mixed rocks

#### **Malpais Series**

*Elevation:* 5,000 to 5,600 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 45 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 2 percent stones and boulders; 10 percent cobbles; 20 percent gravel  
*Texture:* Stony sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium and colluvium derived from mixed rocks

#### ***Dominant Present Vegetation***

Malpais: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale, spiny hopsage  
 Malpais: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale, spiny hopsage  
 Inclusion 1: Bailey greasewood, Indian ricegrass, fourwing saltbush, needleandthread  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 3: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

#### ***Ecological Site***

Malpais: 027XY018NV  
 Malpais: 027XY018NV  
 Inclusion 1: 027XY009NV  
 Inclusion 2: 027XY018NV  
 Inclusion 3: 027XY013NV

### **1140--Roic-Biddleman-Hooten association**

#### ***Composition***

##### **Major Components**

Roic gravelly sandy loam, 4 to 15 percent slopes--35 percent  
 Biddleman gravelly sandy loam, 4 to 8 percent slopes--30 percent  
 Hooten very gravelly sand, 2 to 4 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Celeton gravelly sandy loam, 4 to 30 percent slopes--5 percent  
 Inclusion 2: Trocken very gravelly sandy loam, 4 to 8 percent slopes--4 percent  
 Inclusion 3: Bluewing very gravelly sand, 0 to 4 percent slopes--3 percent  
 Inclusion 4: Rock outcrop--3 percent

#### ***Map Unit Setting***

*Landscape position:* Hills and intermontane basins  
 Roic--Landform: Hills

Biddleman--Landform: Beach terraces; position on slope: lower  
 Hooten--Landform: Beach terraces  
 Inclusion 1--Landform: Hills  
 Inclusion 2--Landform: Longshore bars (relict)  
 Inclusion 3--Landform: Drainageways  
 Inclusion 4--Landform: Hills

#### ***Major Component Description***

##### **Roic Series**

*Elevation:* 4,000 to 4,400 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 53 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 5 percent cobbles; 30 percent gravel  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from sedimentary rocks

##### **Biddleman Series**

*Elevation:* 4,000 to 4,400 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 53 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

##### **Hooten Series**

*Elevation:* 4,000 to 4,400 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 54 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sand  
*Drainage class:* Moderately well drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

#### ***Dominant Present Vegetation***

Roic: Bailey greasewood, Cooper wolfberry, Indian ricegrass, bottlebrush squirreltail, shadscale  
 Biddleman: Bailey greasewood, Cooper wolfberry, Indian ricegrass, shadscale  
 Hooten: Indian ricegrass, Sandberg bluegrass, black greasewood, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat  
 Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 3: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 4: None

#### ***Ecological Site***

Roic: 027XY043NV  
 Biddleman: 027XY043NV  
 Hooten: 027XY024NV  
 Inclusion 1: 027XY027NV

Inclusion 2: 027XY050NV  
 Inclusion 3: 027XY050NV  
 Inclusion 4: none

## 1142--Roic-Mazuma-Celeton association

### *Composition*

#### **Major Components**

Roic gravelly sandy loam, 2 to 15 percent slopes--50 percent  
 Mazuma fine sandy loam, 2 to 8 percent slopes--20 percent  
 Celeton cobbly sandy loam, 2 to 15 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--8 percent  
 Inclusion 2: Osobb very cobbly sandy loam, 2 to 30 percent slopes--3 percent  
 Inclusion 3: Pirouette very cobbly loam, 4 to 15 percent slopes--2 percent  
 Inclusion 4: Trocken gravelly sandy loam, 2 to 8 percent slopes--2 percent

### *Map Unit Setting*

*Landscape position:* Hills and intermontane basins  
 Roic--Landform: Hills  
 Mazuma--Landform: Lake terraces; geomorphic position: summit  
 Celeton--Landform: Hills  
 Inclusion 1--Landform: Hills  
 Inclusion 2--Landform: Hills; geomorphic position: backslope  
 Inclusion 3--Landform: Hills; geomorphic position: summit  
 Inclusion 4--Landform: Beach terraces

### *Major Component Description*

#### **Roic Series**

*Elevation:* 4,200 to 4,600 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from sedimentary rocks

#### **Mazuma Series**

*Elevation:* 4,200 to 4,600 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks and lacustrine sediments

#### **Celeton Series**

*Elevation:* 4,200 to 4,600 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days  
*Texture:* Cobbly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from diatomite

### *Dominant Present Vegetation*

Roic: Bailey greasewood, Cooper wolfberry, Nevada dalea, bud sagebrush, littleleaf horsebrush, shadscale  
 Mazuma: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Celeton: Bailey greasewood, Indian ricegrass, desert needlegrass, shadscale, winterfat  
 Inclusion 1: None  
 Inclusion 2: Bailey greasewood, Indian ricegrass, Nevada ephedra, desert needlegrass, shadscale  
 Inclusion 3: Bailey greasewood, Indian ricegrass, shadscale  
 Inclusion 4: Bailey greasewood, Indian ricegrass, shadscale

### *Ecological Site*

Roic: 027XY027NV  
 Mazuma: 027XY018NV  
 Celeton: 027XY027NV  
 Inclusion 1: none  
 Inclusion 2: 027XY027NV  
 Inclusion 3: 027XY018NV  
 Inclusion 4: 027XY050NV

## 1143--Roic-Trocken-Celeton association

### *Composition*

#### **Major Components**

Roic gravelly sandy loam, 2 to 15 percent slopes--40 percent  
 Trocken gravelly fine sandy loam, 2 to 4 percent slopes--25 percent  
 Celeton cobbly sandy loam, 2 to 15 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--10 percent  
 Inclusion 2: Singatse very cobbly sandy loam, 15 to 30 percent slopes--5 percent

### *Map Unit Setting*

*Landscape position:* Hills and intermontane basins  
 Roic--Landform: Hills  
 Trocken--Landform: Beach terraces  
 Celeton--Landform: Hills  
 Inclusion 1--Landform: Hills  
 Inclusion 2--Landform: Hills

### *Major Component Description*

#### **Roic Series**

*Elevation:* 4,300 to 5,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam

*Drainage class:* Well drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

#### **Trocken Series**

*Elevation:* 4,200 to 5,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks

#### **Celeton Series**

*Elevation:* 4,200 to 5,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Cobbly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from diatomite

#### ***Dominant Present Vegetation***

Roic: Bailey greasewood, Cooper wolfberry, Nevada dalea, bud sagebrush, littleleaf horsebrush, shadscale  
 Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat  
 Inclusion 1: None  
 Inclusion 2: Bailey greasewood, Indian ricegrass, desert needlegrass, shadscale

#### ***Ecological Site***

Roic: 027XY027NV  
 Trocken: 027XY050NV  
 Celeton: 027XY027NV  
 Inclusion 1: none  
 Inclusion 2: 027XY027NV

### **1144--Roic-Singatse-Celeton association**

#### ***Composition***

##### **Major Components**

Roic gravelly sandy loam, 8 to 30 percent slopes--40 percent  
 Singatse very stony sandy loam, 8 to 30 percent slopes--35 percent  
 Celeton cobbly sandy loam, 8 to 30 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Trocken very gravelly sandy loam, 4 to 15 percent slopes--4 percent  
 Inclusion 2: Rock outcrop--3 percent  
 Inclusion 3: Biddleman very gravelly sandy loam, 2 to 8 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Mountains and intermontane basins  
 Roic--Landform: Hills  
 Singatse--Landform: Hills; geomorphic position: backslope; shape of slope: convex  
 Celeton--Landform: Hills  
 Inclusion 1--Landform: Beach terraces  
 Inclusion 2--Landform: Mountains  
 Inclusion 3--Landform: Lake terraces; geomorphic position: summit

#### ***Major Component Description***

##### **Roic Series**

*Elevation:* 4,400 to 5,400 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from sedimentary rocks

##### **Singatse Series**

*Elevation:* 4,400 to 5,400 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 110 days  
*Texture:* Very stony sandy loam  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Residuum and colluvium derived from volcanic rocks

##### **Celeton Series**

*Elevation:* 4,400 to 5,400 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Cobbly sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from diatomite

#### ***Dominant Present Vegetation***

Roic: Bailey greasewood, Cooper wolfberry, Nevada dalea, bud sagebrush, littleleaf horsebrush, shadscale  
 Singatse: Bailey greasewood, Indian ricegrass, shadscale  
 Celeton: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat  
 Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale  
 Inclusion 2: None  
 Inclusion 3: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

#### ***Ecological Site***

Roic: 027XY027NV  
 Singatse: 027XY027NV  
 Celeton: 027XY027NV

Inclusion 1: 027XY050NV  
 Inclusion 2: none  
 Inclusion 3: 027XY018NV

### 1145--Roic-Patna association

#### *Composition*

##### **Major Components**

Roic very gravelly fine sandy loam, 4 to 30 percent slopes--60 percent

Patna sand, 2 to 4 percent slopes--25 percent

##### **Contrasting Inclusions**

Inclusion 1: Cleaver gravelly sandy loam, 2 to 8 percent slopes--7 percent

Inclusion 2: Celeton cobbly sandy loam, 8 to 30 percent slopes--5 percent

Inclusion 3: Theon very stony loam, 15 to 30 percent slopes--3 percent

#### *Map Unit Setting*

*Landscape position:* Hills and intermontane basins

Roic--Landform: Hills

Patna--Landform: Lake terraces

Inclusion 1--Landform: Fan remnants; position on slope: upper

Inclusion 2--Landform: Hills

Inclusion 3--Landform: Hills

#### *Major Component Description*

##### **Roic Series**

*Elevation:* 4,300 to 4,800 feet

*Precipitation:* About 5 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from sedimentary rocks

##### **Patna Series**

*Elevation:* 4,300 to 4,800 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Sand

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Eolian material over lacustrine sediments

#### *Dominant Present Vegetation*

Roic: Bailey greasewood, Cooper wolfberry, Nevada dalea, bud sagebrush, littleleaf horsebrush, shadscale

Patna: Bailey greasewood, Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale, winterfat

Inclusion 3: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

#### *Ecological Site*

Roic: 027XY027NV

Patna: 027XY009NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY027NV

Inclusion 3: 027XY019NV

### 1150--Phing-Buffaran association

#### *Composition*

##### **Major Components**

Phing cobbly sandy loam, 4 to 15 percent slopes--70 percent

Buffaran very stony loam, 4 to 15 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Aquic Haploxererts, fine, montmorillonitic, frigid, 0 to 2 percent slopes--10 percent

#### *Map Unit Setting*

*Landscape position:* Fan piedmonts

Phing--Landform: Fan remnants; geomorphic position: summit; aspect: north

Buffaran--Landform: Fan remnants; geomorphic position: summit; aspect: south

Inclusion 1--Landform: Inset fans; shape of slope: concave

#### *Major Component Description*

##### **Phing Series**

*Elevation:* 6,200 to 6,700 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 110 days

*Surface rock fragments:* 30 percent cobbles; 20 percent gravel

*Texture:* Cobbly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

##### **Buffaran Series**

*Elevation:* 6,200 to 6,700 feet

*Precipitation:* About 9 inches

*Air temperature:* About 49 degrees

*Frost-free season:* About 100 days

*Texture:* Very stony loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### *Dominant Present Vegetation*

Phing: Sandberg bluegrass, Thurber needlegrass, bottlebrush squirreltail

Buffaran: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

Inclusion 1: Wyoming big sagebrush, bottlebrush  
squirrealtail, littleleaf horsebrush, low sagebrush

### ***Ecological Site***

Phing: 027XY079NV

Buffaran: 027XY008NV

Inclusion 1: 026XY027NV

## **1160--Sojur-Singatse association**

### ***Composition***

#### **Major Components**

Sojur, 15 to 30 percent slopes--65 percent

Singatse very gravelly sandy loam, 15 to 50 percent  
slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Rock outcrop--5 percent

Inclusion 2: Trocken very gravelly sandy loam, 4 to  
8 percent slopes--4 percent

Inclusion 3: Roic cobbly sandy loam, 15 to 30  
percent slopes--4 percent

Inclusion 4: Celeton cobbly sandy loam, 8 to 30  
percent slopes--2 percent

### ***Map Unit Setting***

*Landscape position:* Mountains and intermontane  
basins

Sojur--Landform: Hills; geomorphic position:  
backslope; aspect: north

Singatse--Landform: Hills; geomorphic position:  
backslope; aspect: south

Inclusion 1--Landform: Hills

Inclusion 2--Landform: Beach terraces

Inclusion 3--Landform: Hills

Inclusion 4--Landform: Hills

### ***Major Component Description***

#### **Sojur Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from  
metamorphic rocks

#### **Singatse Series**

*Elevation:* 4,200 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly sandy loam

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Residuum and colluvium  
derived from volcanic rocks

### ***Dominant Present Vegetation***

Sojur: Bailey greasewood, Indian ricegrass, bud  
sagebrush, desert needlegrass, shadscale

Singatse: Bailey greasewood, Indian ricegrass, bud  
sagebrush, desert needlegrass, shadscale

Inclusion 1: None

Inclusion 2: Indian ricegrass, Sandberg bluegrass,  
bud sagebrush, shadscale, winterfat

Inclusion 3: Bailey greasewood, Cooper wolfberry,  
Nevada dalea, bud sagebrush, littleleaf  
horsebrush, shadscale

Inclusion 4: Bailey greasewood, Indian ricegrass,  
bud sagebrush, desert needlegrass, shadscale,  
winterfat

### ***Ecological Site***

Sojur: 027XY027NV

Singatse: 027XY027NV

Inclusion 1: none

Inclusion 2: 027XY013NV

Inclusion 3: 027XY027NV

Inclusion 4: 027XY027NV

## **1171--Tocan-Aboten association**

### ***Composition***

#### **Major Components**

Tocan sandy loam, 2 to 8 percent slopes--75  
percent

Aboten very gravelly sandy loam, 2 to 4 percent  
slopes--10 percent

#### **Contrasting Inclusions**

Inclusion 1: Mazuma gravelly sandy loam, 2 to 8  
percent slopes--9 percent

Inclusion 2: Bluewing very gravelly sand, 2 to 4  
percent slopes--6 percent

### ***Map Unit Setting***

*Landscape position:* Piedmont slopes

Tocan--Landform: Fan remnants; geomorphic  
position: summit; position on slope: lower

Aboten--Landform: Fan remnants; geomorphic  
position: summit; position on slope: upper

Inclusion 1--Landform: Fan skirts

Inclusion 2--Landform: Drainageways

### ***Major Component Description***

#### **Tocan Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from  
mixed rocks

#### **Aboten Series**

*Elevation:* 4,500 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 5 percent cobbles; 30  
percent gravel

*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

### ***Dominant Present Vegetation***

Tocan: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Aboten: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

### ***Ecological Site***

Tocan: 027XY018NV  
 Aboten: 027XY018NV  
 Inclusion 1: 027XY018NV  
 Inclusion 2: 027XY022NV

## **1180--Jerval-Trocken association**

### ***Composition***

#### **Major Components**

Jerval gravelly very fine sandy loam, 2 to 8 percent slopes--60 percent  
 Trocken very gravelly sandy loam, 2 to 8 percent slopes--30 percent

#### **Contrasting Inclusions**

Inclusion 1: Roic gravelly sandy loam, 8 to 30 percent slopes--7 percent  
 Inclusion 2: Bluewing stony loamy sand, 2 to 4 percent slopes--3 percent

### ***Map Unit Setting***

*Landscape position:* Hills and intermontane basins  
 Jerval--Landform: Fan remnants; geomorphic position: summit  
 Trocken--Landform: Inset fans  
 Inclusion 1--Landform: Hills  
 Inclusion 2--Landform: Drainageways

### ***Major Component Description***

#### **Jerval Series**

*Elevation:* 4,100 to 4,700 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 5 percent cobbles; 90 percent gravel  
*Texture:* Gravelly very fine sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### **Trocken Series**

*Elevation:* 4,100 to 4,700 feet  
*Precipitation:* About 7 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 120 days  
*Texture:* Very gravelly sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

### ***Dominant Present Vegetation***

Jerval: Indian ricegrass, bud sagebrush, shadscale, winterfat  
 Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Inclusion 1: Bailey greasewood, Cooper wolfberry, Nevada dalea, bud sagebrush, littleleaf horsebrush, shadscale  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

### ***Ecological Site***

Jerval: 027XY013NV  
 Trocken: 027XY050NV  
 Inclusion 1: 027XY027NV  
 Inclusion 2: 027XY022NV

## **1200--Arclay very gravelly coarse sandy loam, 4 to 15 percent slopes**

### ***Composition***

#### **Major Components**

Arclay very gravelly coarse sandy loam, 4 to 15 percent slopes--90 percent

#### **Contrasting Inclusions**

Inclusion 1: Old Camp very gravelly loam, 15 to 50 percent slopes--6 percent  
 Inclusion 2: Rock outcrop--4 percent

### ***Map Unit Setting***

*Landscape position:* Mountains and foothills  
 Arclay--Landform: Mountains; geomorphic position: backslope  
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave  
 Inclusion 2--Landform: Mountains

### ***Major Component Description***

#### **Arclay Series**

*Elevation:* 5,400 to 5,900 feet  
*Precipitation:* About 9 inches  
*Air temperature:* About 50 degrees  
*Frost-free season:* About 110 days  
*Surface rock fragments:* 50 percent gravel  
*Texture:* Very gravelly coarse sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from granitic rocks

### ***Dominant Present Vegetation***

Arclay: Thurber needlegrass, bluegrass, desert needlegrass  
 Inclusion 1: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage  
 Inclusion 2: None

**Ecological Site**

Arclay: 027XY079NV  
 Inclusion 1: 027XY007NV  
 Inclusion 2: none

*Texture:* Gravelly sandy loam  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Alluvium derived from granitic rocks

**1210--Biga-Granshaw-Labkey association****Composition****Major Components**

Biga gravelly coarse sandy loam, 2 to 8 percent slopes--35 percent  
 Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes--30 percent  
 Labkey gravelly sandy loam, 0 to 2 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Mazuma sandy loam, 0 to 2 percent slopes, occasionally flooded--5 percent  
 Inclusion 2: Bluewing gravelly loamy sand, 0 to 2 percent slopes--5 percent  
 Inclusion 3: Hawsley sand, 0 to 4 percent slopes--5 percent

**Map Unit Setting**

*Landscape position:* Fan piedmonts  
 Biga--Landform: Fan remnants; geomorphic position: summit; shape of slope: convex  
 Granshaw--Landform: Fan aprons  
 Labkey--Landform: Inset fans  
 Inclusion 1--Landform: Inset fans  
 Inclusion 2--Landform: Drainageways  
 Inclusion 3--Landform: Sand sheets

**Major Component Description****Biga Series**

*Elevation:* 4,400 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Gravelly coarse sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

**Granshaw Series**

*Elevation:* 4,400 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 50 percent gravel  
*Texture:* Gravelly coarse sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Alluvium derived from granitic rocks

**Labkey Series**

*Elevation:* 4,400 to 5,000 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 40 percent gravel

**Dominant Present Vegetation**

Biga: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale  
 Granshaw: Bailey greasewood, Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Labkey: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale  
 Inclusion 1: Indian ricegrass, bud sagebrush, needleandthread, winterfat  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage  
 Inclusion 3: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat

**Ecological Site**

Biga: 027XY050NV  
 Granshaw: 027XY050NV  
 Labkey: 027XY018NV  
 Inclusion 1: 027XY014NV  
 Inclusion 2: 027XY022NV  
 Inclusion 3: 027XY009NV

**1211--Biga gravelly coarse sandy loam, 2 to 8 percent slopes****Composition****Major Components**

Biga gravelly coarse sandy loam, 2 to 8 percent slopes--85 percent

**Contrasting Inclusions**

Inclusion 1: Labkey gravelly sandy loam, 2 to 4 percent slopes--7 percent  
 Inclusion 2: Bluewing very gravelly sand, 0 to 2 percent slopes--3 percent  
 Inclusion 3: Granshaw gravelly sandy loam, 2 to 8 percent slopes--3 percent  
 Inclusion 4: Mazuma gravelly sandy loam, 0 to 2 percent slopes--2 percent

**Map Unit Setting**

*Landscape position:* Fan piedmonts  
 Biga--Landform: Fan remnants; geomorphic position: summit  
 Inclusion 1--Landform: Inset fans  
 Inclusion 2--Landform: Drainageways  
 Inclusion 3--Landform: Fan aprons  
 Inclusion 4--Landform: Inset fans

**Major Component Description****Biga Series**

*Elevation:* 4,400 to 5,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 30 percent gravel



*Texture:* Gravelly coarse sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

#### ***Dominant Present Vegetation***

Biga: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 3: Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 4: Indian ricegrass, bud sagebrush, needleandthread, winterfat

#### ***Ecological Site***

Biga: 027XY018NV

Inclusion 1: 027XY050NV

Inclusion 2: 027XY022NV

Inclusion 3: 027XY013NV

Inclusion 4: 027XY014NV

### **1212--Biga-Roic-Labkey association**

#### ***Composition***

##### **Major Components**

Biga gravelly coarse sandy loam, 2 to 8 percent slopes--40 percent

Roic very gravelly fine sandy loam, 4 to 30 percent slopes--30 percent

Labkey gravelly sandy loam, 2 to 8 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Mazuma very fine sandy loam, 0 to 2 percent slopes--7 percent

Inclusion 2: Granshaw gravelly coarse sandy loam, 0 to 4 percent slopes--5 percent

Inclusion 3: Bluewing gravelly sandy loam, 0 to 2 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Hills and intermontane basins

Biga--Landform: Fan remnants; geomorphic position: summit; shape of slope: convex

Roic--Landform: Hills

Labkey--Landform: Inset fans

Inclusion 1--Landform: Fan skirts

Inclusion 2--Landform: Fan aprons

Inclusion 3--Landform: Drainageways

#### ***Major Component Description***

##### **Biga Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly coarse sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash

##### **Roic Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 35 percent gravel

*Texture:* Very gravelly fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from sedimentary rocks

##### **Labkey Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Gravelly sandy loam

*Drainage class:* Somewhat excessively drained

*Dominant parent material:* Alluvium derived from granitic rocks

#### ***Dominant Present Vegetation***

Biga: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Roic: Bailey greasewood, Cooper wolfberry, Nevada dalea, bud sagebrush, littleleaf horsebrush, shadscale

Labkey: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 2: Indian ricegrass, Sandberg bluegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 3: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

#### ***Ecological Site***

Biga: 027XY018NV

Roic: 027XY027NV

Labkey: 027XY050NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY013NV

Inclusion 3: 027XY022NV

### **1220--Labkey gravelly sandy loam, 2 to 8 percent slopes**

#### ***Composition***

##### **Major Components**

Labkey gravelly sandy loam, 2 to 8 percent slopes--90 percent

##### **Contrasting Inclusions**

Inclusion 1: Hawsley fine sand, 2 to 8 percent slopes--7 percent

Inclusion 2: Bluewing gravelly sandy loam, 2 to 8 percent slopes--2 percent

Inclusion 3: Labkey very gravelly loamy sand, 0 to 4 percent slopes--1 percent

**Map Unit Setting***Landscape position:* Piedmont slopes

Labkey--Landform: Fan skirts

Inclusion 1--Landform: Sand sheets

Inclusion 2--Landform: Inset fans

Inclusion 3--Landform: Drainageways

**Major Component Description****Labkey Series***Elevation:* 4,000 to 4,600 feet*Precipitation:* About 6 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Surface rock fragments:* 20 percent gravel*Texture:* Gravelly sandy loam*Drainage class:* Somewhat excessively drained*Dominant parent material:* Alluvium derived from granitic rocks**Dominant Present Vegetation**

Labkey: Bailey greasewood, Indian ricegrass,

bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat

Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 3: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

**Ecological Site**

Labkey: 027XY050NV

Inclusion 1: 027XY009NV

Inclusion 2: 027XY050NV

Inclusion 3: 027XY022NV

**1230--Genegraf-Bluewing-Dorper association****Composition****Major Components**

Genegraf very gravelly very fine sandy loam, 2 to 8 percent slopes--40 percent

Bluewing gravelly sandy loam, 2 to 8 percent slopes--25 percent

Dorper very gravelly sandy loam, 2 to 8 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Hawsley sand, 2 to 8 percent slopes--8 percent

Inclusion 2: Bluewing very gravelly sand, 2 to 4 percent slopes--5 percent

Inclusion 3: Trocken very gravelly sandy loam, 4 to 15 percent slopes--2 percent

**Map Unit Setting***Landscape position:* Fan piedmonts

Genegraf--Landform: Fan remnants; geomorphic position: summit; position on slope: upper

Bluewing--Landform: Inset fans

Dorper--Landform: Fan remnants; shape of slope: convex

Inclusion 1--Landform: Sand sheets

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Fan remnants; geomorphic position: backslope

**Major Component Description****Genegraf Series***Elevation:* 4,300 to 5,000 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 120 days*Texture:* Very gravelly very fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from volcanic rocks**Bluewing Series***Elevation:* 4,300 to 5,000 feet*Precipitation:* About 6 inches*Air temperature:* About 51 degrees*Frost-free season:* About 120 days*Texture:* Gravelly sandy loam*Drainage class:* Excessively drained*Dominant parent material:* Alluvium derived from mixed rocks**Dorper Series***Elevation:* 4,300 to 5,000 feet*Precipitation:* About 6 inches*Air temperature:* About 52 degrees*Frost-free season:* About 125 days*Surface rock fragments:* 50 percent gravel*Texture:* Very gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks, loess, and volcanic ash**Dominant Present Vegetation**

Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage

Bluewing: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Dorper: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, Nevada dalea, fourwing saltbush, needleandthread, shadscale, winterfat

Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 3: Bailey greasewood, Indian ricegrass, shadscale

**Ecological Site**

Genegraf: 027XY018NV

Bluewing: 027XY050NV

Dorper: 027XY050NV

Inclusion 1: 027XY009NV

Inclusion 2: 027XY022NV

Inclusion 3: 027XY050NV

### 1231--Genegraf-Trocken-Bluewing association

#### *Composition*

##### **Major Components**

Genegraf very gravelly very fine sandy loam, 2 to 8 percent slopes--35 percent

Trocken very gravelly very fine sandy loam, 2 to 8 percent slopes--30 percent

Bluewing very gravelly loamy sand, 2 to 8 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing very gravelly loamy sand, 2 to 4 percent slopes--6 percent

Inclusion 2: Mazuma very fine sandy loam, 0 to 2 percent slopes--6 percent

Inclusion 3: Trocken stony loam, 2 to 4 percent slopes--3 percent

#### *Map Unit Setting*

*Landscape position:* Piedmont slopes

Genegraf--Landform: Fan remnants; geomorphic position: summit

Trocken--Landform: Fan skirts

Bluewing--Landform: Drainageways

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Fan skirts; position on slope: lower

Inclusion 3--Landform: Beach terraces; shape of slope: concave

#### *Major Component Description*

##### **Genegraf Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from volcanic rocks

##### **Trocken Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly very fine sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Alluvium derived from mixed rocks

##### **Bluewing Series**

*Elevation:* 4,400 to 5,000 feet

*Precipitation:* About 6 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loamy sand

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from mixed rocks

#### *Dominant Present Vegetation*

Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage

Trocken: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

Bluewing: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 3: Indian ricegrass, Sandberg bluegrass, bud sagebrush, shadscale, winterfat

#### *Ecological Site*

Genegraf: 027XY018NV

Trocken: 027XY013NV

Bluewing: 027XY022NV

Inclusion 1: 027XY050NV

Inclusion 2: 027XY018NV

Inclusion 3: 027XY013NV

### 1232--Genegraf-Rednik-Trocken association

#### *Composition*

##### **Major Components**

Genegraf gravelly fine sandy loam, 2 to 8 percent slopes--45 percent

Rednik very gravelly sandy loam, 8 to 15 percent slopes--25 percent

Trocken very gravelly sandy loam, 2 to 4 percent slopes--20 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing very gravelly sand, 0 to 4 percent slopes--6 percent

Inclusion 2: Genegraf very gravelly loam, 2 to 4 percent slopes--4 percent

#### *Map Unit Setting*

*Landscape position:* Fan piedmonts

Genegraf--Landform: Fan remnants; geomorphic position: summit; position on slope: upper

Rednik--Landform: Fan remnants; geomorphic position: backslope

Trocken--Landform: Inset fans

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Fan remnants; geomorphic position: summit; position on slope: upper

#### *Major Component Description*

##### **Genegraf Series**

*Elevation:* 4,300 to 4,800 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 6 percent cobbles; 30 percent gravel

*Texture:* Gravelly fine sandy loam

*Drainage class:* Well drained

**Dominant parent material:** Alluvium derived from volcanic rocks

#### **Rednik Series**

**Elevation:** 4,300 to 4,800 feet

**Precipitation:** About 6 inches

**Air temperature:** About 51 degrees

**Frost-free season:** About 120 days

**Texture:** Very gravelly sandy loam

**Drainage class:** Well drained

**Dominant parent material:** Alluvium derived from mixed rocks

#### **Trocken Series**

**Elevation:** 4,300 to 4,800 feet

**Precipitation:** About 6 inches

**Air temperature:** About 51 degrees

**Frost-free season:** About 120 days

**Texture:** Very gravelly sandy loam

**Drainage class:** Well drained

**Dominant parent material:** Alluvium derived from mixed rocks

#### **Dominant Present Vegetation**

Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage

Rednik: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Trocken: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 2: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage

#### **Ecological Site**

Genegraf: 027XY018NV

Rednik: 027XY018NV

Trocken: 027XY050NV

Inclusion 1: 027XY022NV

Inclusion 2: 027XY013NV

### **1233--Genegraf-Buckaroo-Bluewing association**

#### **Composition**

##### **Major Components**

Genegraf gravelly sandy loam, 2 to 8 percent slopes--45 percent

Buckaroo very gravelly very fine sandy loam, 2 to 8 percent slopes--30 percent

Bluewing very gravelly loamy sand, 2 to 8 percent slopes--15 percent

##### **Contrasting Inclusions**

Inclusion 1: Bluewing very gravelly loamy sand, 2 to 8 percent slopes, rarely flooded--6 percent

Inclusion 2: Trocken very gravelly sandy loam, 8 to 30 percent slopes--2 percent

Inclusion 3: Aboten very fine sandy loam, 2 to 4 percent slopes--2 percent

#### **Map Unit Setting**

**Landscape position:** Fan piedmonts

Genegraf--Landform: Fan remnants; geomorphic position: summit; position on slope: lower

Buckaroo--Landform: Fan remnants; geomorphic position: summit; position on slope: upper

Bluewing--Landform: Drainageways

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Inclusion 3--Landform: Fan remnants; position on slope: upper

#### **Major Component Description**

##### **Genegraf Series**

**Elevation:** 4,400 to 4,800 feet

**Precipitation:** About 5 inches

**Air temperature:** About 51 degrees

**Frost-free season:** About 120 days

**Texture:** Gravelly sandy loam

**Drainage class:** Well drained

**Dominant parent material:** Alluvium derived from volcanic rocks

##### **Buckaroo Series**

**Elevation:** 4,400 to 4,800 feet

**Precipitation:** About 5 inches

**Air temperature:** About 51 degrees

**Frost-free season:** About 120 days

**Texture:** Very gravelly very fine sandy loam

**Drainage class:** Well drained

**Dominant parent material:** Alluvium derived from volcanic rocks

##### **Bluewing Series**

**Elevation:** 4,400 to 4,800 feet

**Precipitation:** About 5 inches

**Air temperature:** About 51 degrees

**Frost-free season:** About 120 days

**Texture:** Very gravelly loamy sand

**Drainage class:** Excessively drained

**Dominant parent material:** Alluvium derived from mixed rocks

#### **Dominant Present Vegetation**

Genegraf: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale, spiny hopsage

Buckaroo: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Bluewing: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 3: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

#### **Ecological Site**

Genegraf: 027XY018NV

Buckaroo: 027XY018NV

Bluewing: 027XY022NV

Inclusion 1: 027XY050NV  
 Inclusion 2: 027XY050NV  
 Inclusion 3: 027XY018NV

## 1280--Soar-Arclay association

### *Composition*

#### **Major Components**

Soar very gravelly coarse sandy loam, 15 to 30 percent slopes--45 percent  
 Arclay very gravelly coarse sandy loam, 15 to 30 percent slopes--25 percent  
 Soar very gravelly coarse sandy loam, 4 to 15 percent slopes--15 percent

#### **Contrasting Inclusions**

Inclusion 1: Aridic Argixerolls, loamy-skeletal, mixed, mesic, 8 to 30 percent slopes--6 percent  
 Inclusion 2: Old Camp very gravelly loam, 8 to 30 percent slopes--4 percent  
 Inclusion 3: Slocave very gravelly coarse sandy loam, 15 to 30 percent slopes--3 percent  
 Inclusion 4: Rebel very gravelly loam, 2 to 8 percent slopes, rarely flooded--2 percent

### *Map Unit Setting*

*Landscape position:* Hills

Soar--Landform: Hills; geomorphic position: backslope; shape of slope: convex

Arclay--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: north

Soar--Landform: Hills; geomorphic position: summit

Inclusion 1--Landform: Hills; geomorphic position: backslope; shape of slope: concave; aspect: north

Inclusion 2--Landform: Hills; geomorphic position: backslope; shape of slope: concave

Inclusion 3--Landform: Hills; geomorphic position: backslope; shape of slope: concave; aspect: south

Inclusion 4--Landform: Stream terraces

### *Major Component Description*

#### **Soar Series**

*Elevation:* 5,000 to 5,900 feet

*Precipitation:* About 8 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Surface rock fragments:* 15 percent cobbles; 40 percent gravel

*Texture:* Very gravelly coarse sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from granitic rocks

#### **Arclay Series**

*Elevation:* 5,400 to 5,900 feet

*Precipitation:* About 9 inches

*Air temperature:* About 50 degrees

*Frost-free season:* About 110 days

*Texture:* Very gravelly coarse sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum and colluvium derived from granitic rocks

#### **Soar Series**

*Elevation:* 5,000 to 5,900 feet

*Precipitation:* About 8 inches

*Air temperature:* About 51 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly coarse sandy loam

*Drainage class:* Well drained

*Dominant parent material:* Residuum derived from granitic rocks

### *Dominant Present Vegetation*

Soar: Indian ricegrass, bluegrass, desert needlegrass, spiny hopsage

Arclay: Thurber needlegrass, bluegrass, desert needlegrass

Soar: Indian ricegrass, bluegrass, desert needlegrass, spiny hopsage

Inclusion 1: Indian ricegrass, basin big sagebrush, desert needlegrass, spiny hopsage

Inclusion 2: Indian ricegrass, Sandberg bluegrass, Thurber needlegrass, Wyoming big sagebrush, spiny hopsage

Inclusion 3: Indian ricegrass, Sandberg bluegrass, desert needlegrass, littleleaf horsebrush, shadscale

Inclusion 4: Indian ricegrass, Thurber needlegrass, Wyoming big sagebrush, pine bluegrass, spiny hopsage

### *Ecological Site*

Soar: 027XY068NV

Arclay: 027XY079NV

Soar: 027XY068NV

Inclusion 1: 027XY072NV

Inclusion 2: 027XY007NV

Inclusion 3: 027XY017NV

Inclusion 4: 027XY029NV

## 1290--Slocave-Vium association

### *Composition*

#### **Major Components**

Slocave very gravelly coarse sandy loam, 30 to 50 percent slopes--70 percent

Vium gravelly coarse sandy loam, 2 to 8 percent slopes--20 percent

#### **Contrasting Inclusions**

Inclusion 1: Theon very gravelly loam, 15 to 50 percent slopes--8 percent

Inclusion 2: Bluewing very gravelly sand, 0 to 4 percent slopes--2 percent

### *Map Unit Setting*

*Landscape position:* Hills

Slocave--Landform: Hills; geomorphic position: backslope

Vium--Landform: Hills; geomorphic position: backslope; position on slope: lower; shape of slope: convex  
 Inclusion 1--Landform: Hills; geomorphic position: backslope; aspect: north  
 Inclusion 2--Landform: Drainageways

### **Major Component Description**

#### **Slocave Series**

*Elevation:* 4,600 to 5,300 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 50 percent gravel  
*Texture:* Very gravelly coarse sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum derived from granitic rocks

#### **Vium Series**

*Elevation:* 4,500 to 5,200 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Surface rock fragments:* 50 percent gravel  
*Texture:* Gravelly coarse sandy loam  
*Drainage class:* Well drained  
*Dominant parent material:* Residuum and colluvium derived from granitic rocks

### **Dominant Present Vegetation**

Slocave: Indian ricegrass, Sandberg bluegrass, desert needlegrass, littleleaf horsebrush  
 Vium: Bailey greasewood, Indian ricegrass, bud sagebrush, desert needlegrass, shadscale  
 Inclusion 1: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, littleleaf horsebrush, shadscale  
 Inclusion 2: Indian ricegrass, burrobrush, littleleaf horsebrush, rubber rabbitbrush, spiny hopsage

### **Ecological Site**

Slocave: 027XY017NV  
 Vium: 027XY027NV  
 Inclusion 1: 027XY019NV  
 Inclusion 2: 027XY022NV

## **1300--Lovelock silt loam, drained**

### **Composition**

#### **Major Components**

Lovelock silt loam, drained, 0 to 2 percent slopes--85 percent

#### **Contrasting Inclusions**

Inclusion 1: Lovelock silt loam, 0 to 2 percent slopes--9 percent  
 Inclusion 2: Isolde fine sand, 4 to 15 percent slopes--3 percent  
 Inclusion 3: Kolda silty clay loam, 0 to 2 percent slopes, ponded--3 percent

### **Map Unit Setting**

*Landscape position:* Intermontane basins  
 Lovelock--Landform: Lake plains  
 Inclusion 1--Landform: Lake plains; position on slope: upper  
 Inclusion 2--Landform: Dunes  
 Inclusion 3--Landform: Lake plains; position on slope: lower

### **Major Component Description**

#### **Lovelock Series**

*Elevation:* 3,800 to 4,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silt loam  
*Drainage class:* Poorly drained  
*Dominant parent material:* Alluvium derived from mixed rocks, diatomaceous earth and volcanic ash

### **Dominant Present Vegetation**

Lovelock: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed  
 Inclusion 1: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed  
 Inclusion 2: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
 Inclusion 3: Cattail, creeping spikerush

### **Ecological Site**

Lovelock: 027XY005NV  
 Inclusion 1: 027XY025NV  
 Inclusion 2: 027XY016NV  
 Inclusion 3: 027XY001NV

## **1301--Lovelock silt loam, rarely flooded**

### **Composition**

#### **Major Components**

Lovelock silt loam, 0 to 2 percent slopes--90 percent

#### **Contrasting Inclusions**

Inclusion 1: Isolde fine sand, 4 to 15 percent slopes--8 percent  
 Inclusion 2: Lovelock silt loam, drained, 0 to 2 percent slopes--2 percent

### **Map Unit Setting**

*Landscape position:* Intermontane basins  
 Lovelock--Landform: Lake plains  
 Inclusion 1--Landform: Dunes  
 Inclusion 2--Landform: Lake plains; position on slope: upper

### **Major Component Description**

#### **Lovelock Series**

*Elevation:* 3,800 to 4,000 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days

*Texture:* Silt loam

*Drainage class:* Poorly drained

*Dominant parent material:* Alluvium derived from mixed rocks, diatomaceous earth and volcanic ash

#### ***Dominant Present Vegetation***

Lovelock: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed  
Inclusion 1: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
Inclusion 2: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed

#### ***Ecological Site***

Lovelock: 027XY005NV  
Inclusion 1: 027XY016NV  
Inclusion 2: 027XY025NV

### **1320--Gardella gravelly silt loam, 0 to 2 percent slopes**

#### ***Composition***

##### **Major Components**

Gardella gravelly silt loam, 0 to 2 percent slopes--85 percent

##### **Contrasting Inclusions**

Inclusion 1: Isalde fine sand, 4 to 15 percent slopes--8 percent  
Inclusion 2: Parran silty clay loam, 0 to 2 percent slopes--4 percent  
Inclusion 3: Playas--3 percent

#### ***Map Unit Setting***

*Landscape position:* Bolsons

Gardella--Landform: Lake terraces

Inclusion 1--Landform: Dunes

Inclusion 2--Landform: Lake terraces; position on slope: lower

Inclusion 3--Landform: Playas

#### ***Major Component Description***

##### **Gardella Series**

*Elevation:* 3,900 to 4,200 feet

*Precipitation:* About 5 inches

*Air temperature:* About 54 degrees

*Frost-free season:* About 130 days

*Surface rock fragments:* 15 percent gravel

*Texture:* Gravelly silt loam

*Drainage class:* Moderately well drained

*Dominant parent material:* Alluvium derived from mixed rocks over lacustrine sediments

#### ***Dominant Present Vegetation***

Gardella: Alkali sacaton, basin wildrye, black greasewood, inland saltgrass, seepweed, shadscale

Inclusion 1: Indian ricegrass, black greasewood, fourwing saltbush, shadscale

Inclusion 2: Alkali sacaton, alkali seepweed, basin wildrye, black greasewood, inland saltgrass

Inclusion 3: None

#### ***Ecological Site***

Gardella: 027XY025NV

Inclusion 1: 027XY016NV

Inclusion 2: 027XY025NV

Inclusion 3: none

### **1330--Parran silty clay, 0 to 2 percent slopes**

#### ***Composition***

##### **Major Components**

Parran silty clay, 0 to 2 percent slopes--85 percent

##### **Contrasting Inclusions**

Inclusion 1: Isalde fine sand, 4 to 15 percent slopes--8 percent  
Inclusion 2: Umland silty clay loam, 0 to 2 percent slopes--4 percent  
Inclusion 3: Playas, 0 to 1 percent slopes--3 percent

#### ***Map Unit Setting***

*Landscape position:* Bolsons

Parran--Landform: Lake plains

Inclusion 1--Landform: Dunes

Inclusion 2--Landform: Drainageways; shape of slope: concave

Inclusion 3--Landform: Playas

#### ***Major Component Description***

##### **Parran Series**

*Elevation:* 3,900 to 4,200 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Silty clay

*Drainage class:* Somewhat poorly drained

*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

#### ***Dominant Present Vegetation***

Parran: Alkali sacaton, alkali seepweed, basin wildrye, black greasewood, inland saltgrass  
Inclusion 1: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
Inclusion 2: Baltic rush, alkali sacaton, black greasewood, inland saltgrass  
Inclusion 3: None

#### ***Ecological Site***

Parran: 027XY025NV

Inclusion 1: 027XY016NV

Inclusion 2: 027XY005NV

Inclusion 3: none

**1331--Parran-Hawsley complex*****Composition*****Major Components**

Parran silty clay, 0 to 2 percent slopes--60 percent  
Hawsley sand, 0 to 4 percent slopes--25 percent

**Contrasting Inclusions**

Inclusion 1: Isolde fine sand, 4 to 15 percent slopes--5 percent  
Inclusion 2: Badland--5 percent  
Inclusion 3: Playas--4 percent  
Inclusion 4: Umlerland silty clay loam, 0 to 2 percent slopes--1 percent

***Map Unit Setting***

*Landscape position:* Bolsons  
Parran--Landform: Lake plains  
Hawsley--Landform: Sand sheets  
Inclusion 1--Landform: Dunes  
Inclusion 2--Landform: Scarp slopes  
Inclusion 3--Landform: Playas  
Inclusion 4--Landform: Drainageways; shape of slope: concave

***Major Component Description*****Parran Series**

*Elevation:* 3,900 to 4,300 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silty clay  
*Drainage class:* Somewhat poorly drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

**Hawsley Series**

*Elevation:* 3,900 to 4,300 feet  
*Precipitation:* About 5 inches  
*Air temperature:* About 52 degrees  
*Frost-free season:* About 120 days  
*Texture:* Sand  
*Drainage class:* Somewhat excessively drained  
*Dominant parent material:* Eolian sand and alluvium derived from mixed rocks

***Dominant Present Vegetation***

Parran: Alkali sacaton, alkali seepweed, basin wildrye, black greasewood, inland saltgrass  
Hawsley: Indian ricegrass, Nevada dalea, black greasewood, fourwing saltbush, needleandthread, shadscale, winterfat  
Inclusion 1: Indian ricegrass, black greasewood, fourwing saltbush, shadscale  
Inclusion 2: None  
Inclusion 3: None  
Inclusion 4: Alkali sacaton, black greasewood, inland saltgrass, seepweed

***Ecological Site***

Parran: 027XY025NV  
Hawsley: 027XY016NV  
Inclusion 1: 027XY016NV  
Inclusion 2: none

Inclusion 3: none  
Inclusion 4: 027XY005NV

**1332--Parran-Umlerland association*****Composition*****Major Components**

Parran silty clay loam, 0 to 2 percent slopes--50 percent  
Umlerland silty clay loam, 0 to 2 percent slopes--40 percent

**Contrasting Inclusions**

Inclusion 1: Playas--10 percent

***Map Unit Setting***

*Landscape position:* Bolsons  
Parran--Landform: Lake plains  
Umlerland--Landform: Drainageways  
Inclusion 1--Landform: Playas

***Major Component Description*****Parran Series**

*Elevation:* 3,900 to 4,300 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silty clay loam  
*Drainage class:* Somewhat poorly drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

**Umlerland Series**

*Elevation:* 3,900 to 4,300 feet  
*Precipitation:* About 6 inches  
*Air temperature:* About 51 degrees  
*Frost-free season:* About 120 days  
*Texture:* Silty clay loam  
*Drainage class:* Somewhat poorly drained  
*Dominant parent material:* Lacustrine sediments derived from volcanic rocks

***Dominant Present Vegetation***

Parran: Alkali sacaton, alkali seepweed, basin wildrye, black greasewood, inland saltgrass  
Umlerland: Alkali bluegrass, inland saltgrass, rush, sedge  
Inclusion 1: None

***Ecological Site***

Parran: 027XY025NV  
Umlerland: 027XY069NV  
Inclusion 1: none

**1340--Inmo association*****Composition*****Major Components**

Inmo very gravelly loamy sand, 2 to 8 percent slopes--70 percent



Inmo very gravelly loamy sand, 2 to 8 percent slopes--20 percent

**Contrasting Inclusions**

Inclusion 1: Rednik very gravelly loam, 2 to 8 percent slopes--7 percent

Inclusion 2: Inmo very stony sandy loam, 2 to 8 percent slopes--3 percent

**Map Unit Setting**

*Landscape position:* Fan piedmonts

Inmo--Landform: Alluvial fans

Inmo--Landform: Drainageways

Inclusion 1--Landform: Fan remnants; geomorphic position: summit

Inclusion 2--Landform: Alluvial fans; position on slope: upper

**Major Component Description**

**Inmo Series**

*Elevation:* 4,100 to 5,200 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loamy sand

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from granitic and volcanic rocks

**Inmo Series**

*Elevation:* 4,100 to 5,200 feet

*Precipitation:* About 5 inches

*Air temperature:* About 52 degrees

*Frost-free season:* About 120 days

*Texture:* Very gravelly loamy sand

*Drainage class:* Excessively drained

*Dominant parent material:* Alluvium derived from granitic and volcanic rocks

**Dominant Present Vegetation**

Inmo: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, shadscale, spiny horsebrush

Inmo: Bailey greasewood, burrobrush, fourwing saltbush, littleleaf horsebrush, rubber rabbitbrush

Inclusion 1: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, bud sagebrush, fourwing saltbush, galleta, shadscale, winterfat

**Ecological Site**

Inmo: 027XY050NV

Inmo: 029XY041NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY018NV

**W--Water**

**Composition**

**Major Components**

Water--100 percent

**Map Unit Setting**

*Landscape position:* Mountains and intermontane basins

**Major Component Description**

**Water Miscellaneous Area**

*Elevation:* 3,900 to 8900 feet

# Prime Farmland

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## Prime Farmland and Other Important Farmland

In this section, prime farmland and other important farmland are defined. The map units in the survey area that are considered prime farmland are listed under "Prime Farmland Map Units" at the end of this section.

### Prime Farmland

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, seed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, woodland or for other purposes. They are used for food and fiber or are available for these uses. Urban or built-up land and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards,

airports, sanitary landfills, sewage treatment plants, and water-control structures.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or alkalinity and the content of salts and sodium are acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils that have a high water table, are subject to flooding, or are droughty may qualify as prime farmland where these limitations are overcome by drainage measures, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

About 6,000 acres, or nearly .25 percent of the survey area, would meet the requirements for prime farmland if an adequate and dependable supply of irrigation water were available. An additional 18,850 acres or about .8 percent of the survey area would qualify as prime farmland if reclaimed, by reduction of salinity and sodicity or by lowering of a water table, and irrigated with an adequate and dependable supply of irrigation water.

The map units in the survey area that meet the requirements for prime farmland are listed under "Prime Farmland Map Units." On some soils included in the list, measures that overcome limitations are needed. The location of each map

unit is shown on the detailed soil maps at the back of this publication. This list does not constitute a recommendation for a particular land use.

### **Unique Farmland**

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil qualities, location, growing season, and moisture supply needed for the economic production of sustained high yields of a specific high-quality crop when treated and managed by acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, and vegetables.

Unique farmland is used for a specific high-value food or fiber crop; has an adequate supply of available moisture for the specific crop because of stored moisture, precipitation, or irrigation; and has a combination of soil qualities, growing season, temperature, humidity, air drainage, elevation, aspect, and other factors, such as nearness to markets, that favor the production of a specific food or fiber crop.

Lists of unique farmland are developed as needed in cooperation with conservation districts and other entities. There are presently no soils recognized as unique farmland in Nevada.

### **Additional Farmland of Statewide Importance**

Some areas other than areas of prime and unique farmland are of statewide importance in the production of food, feed, fiber, forage, and oilseed crops. The criteria used in defining and delineating these areas are determined by the appropriate State agency or agencies. Generally, additional farmland of statewide importance includes areas that nearly meet the criteria for prime farmland and that economically produce high yields of crops

when treated and managed by acceptable farming methods. Some areas can produce as high a yield as areas of prime farmland if conditions are favorable. In some states additional farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

Nevada has designated any farmland that is irrigated to be of statewide importance.

### **Prime Farmland Map Units**

The following map units are prime farmland where irrigated with an adequate and dependable water supply:

- 591 Rebel loam, 0 to 2 percent slopes
- 1300 Lovelock silt loam, drained

The soils in Churchill County typically have high salinity and sodicity which are restrictive to plant growth. Proper management to reduce the salinity and sodicity in the soil can alter the chemical properties of many soils so that they also will rate as prime farmland. The following map units may meet the soil requirements for prime farmland if reclaimed by reducing salinity and sodicity and they are irrigated:

- 470 Hessing-Wholan-Dun Glen association
- 592 Rebel-Wholan-Pineval association
- 645 Mazuma very fine sandy loam, 0 to 4 percent slopes

The following map units have a water table that exists within the root zone of most crops. If the water table is lowered, these soils would meet the requirement for prime farmland if they are irrigated:

- 580 Welch loam, 2 to 8 percent slopes

# Classification of the Soils

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The system of soil classification used by the National Cooperative Soil Survey has six categories. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 17, "Classification of the Soils," in Part II of this Publication shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

**ORDER.** Eleven soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

**SUBORDER.** Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Xeroll (*Xer, meaning xeric, plus oll, from Mollisol*).

**GREAT GROUP.** Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Argixeroll. (*Argi, meaning presence of argillic horizon, plus xeroll, the suborder of the Mollisols that have a xeric moisture regime*).

**SUBGROUP.** Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the

name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Argixerolls.

**FAMILY.** Families are established within a subgroup on the basis of physical and chemical properties and other Characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and Characteristics considered are particle-size class, mineral content, temperature regime, thickness of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is loamy-skeletal, mixed, frigid, Typic Argixerolls.

**SERIES.** The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series. Clanalpine series is an example of a soil series.

## Taxonomic Units and Their Morphology

In this section, each taxonomic unit recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each unit. A pedon, a small three-dimensional area of soil, that is typical of the unit in the survey area is described. The detailed description of each soil horizon follow standards in the "Soil Survey Manual"(6). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy"(7). Unless otherwise stated, colors in the descriptions are for dry soil. Following the pedon description is

the range of important Characteristics of the soils in the unit.

The map units of each taxonomic unit are described in the section "Detailed Soil Map Units".

## Aboten Series

The Aboten series consists of shallow to a duripan, well drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Aboten soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Loamy, mixed, mesic, shallow Haplic Nadurargids

**Typical pedon:** Aboten very gravelly sandy loam, 4 to 8 percent slopes, in map unit 820. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles and 5 percent cobbles.

A=0 to 5 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, nonsticky and nonplastic; few fine roots; many medium and coarse vesicular pores; 50 percent pebbles; strongly alkaline (pH 8.6); abrupt smooth boundary.

Btnk1=5 to 8 inches; light yellowish brown (10YR 6/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, sticky and plastic; many fine and medium roots; common medium interstitial and fine tubular pores; few thin clay films on faces of peds; lime is disseminated; slightly effervescent; SAR is 88; 15 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Btnk2=8 to 13 inches; light yellowish brown (10YR 6/4) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, sticky and plastic; common fine and medium roots; common medium interstitial and fine tubular pores; clay films on faces of peds and lining

pores; few thin lime coats on undersides of pebbles; strongly effervescent; SAR is 57; 15 percent pebbles; moderately alkaline (pH 8.2); clear wavy boundary.

Bk=13 to 19 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial pores; lime is disseminated; violently effervescent; 50 percent pebbles; moderately alkaline (pH 8.3); abrupt wavy boundary.

Bqkm=19 to 21 inches; white (10YR 8/2) strongly cemented duripan with discontinuous 1/16 inch thick laminar cap, light yellowish brown (10YR 6/4) moist; massive; very hard, extremely firm; lime is disseminated; violently effervescent; clear irregular boundary.

2Bqk1=21 to 31 inches; very pale brown (10YR 7/3) very gravelly loamy coarse sand, yellowish brown (10YR 5/4) moist; massive; loose, nonsticky and nonplastic; many very fine interstitial pores; 25 percent strongly to weakly silica cemented pebble sized pan fragments; lime is disseminated; violently effervescent; 40 percent pebbles and 10 percent cobbles; moderately alkaline (pH 8.4); gradual irregular boundary.

2Bqk2=31 to 60 inches; very pale brown (10YR 7/3) very gravelly coarse sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; many very fine interstitial pores; 10 percent strongly cemented durinodes; lime is disseminated; violently effervescent; 50 percent pebbles; strongly alkaline (pH 8.8).

**Type location:** Churchill County, Nevada; approximately 5,800 feet west of Highway 839; 1,800 feet east and 500 feet south of the projected northwest corner of section 19, T. 15 N., R. 33 E.; (39 degrees, 09 minutes, 13 seconds north latitude and 118 degrees, 19 minutes, 25 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist late fall through early spring, dry from May through early November.

**Soil temperature:** 53 to 57 degrees F.

Other features=The Bk horizons are above the Bqkm in some pedons.

**A horizon:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Reaction = Moderately alkaline or strongly alkaline.

**2B<sub>tnk</sub> horizon:**

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Loam, clay loam, or sandy clay loam.

Clay content = Averages 25 to 35 percent.

Rock fragments = 5 to 15 percent, mainly pebbles.

Structure = Prismatic, subangular blocky, or the horizon may be massive when wet.

Consistence = Slightly hard or hard dry; friable or firm moist.

Reaction = Moderately alkaline or strongly alkaline.

Sodicity (SAR) = 13 to 90.

**2B<sub>qkm</sub> horizon:**

Hue = 10YR or 7.5YR.

Value = 7 or 8 dry, 5 through 7 moist.

Chroma = 2 through 4.

Rock fragments = 50 to 70 percent, mainly pebbles imbedded in the matrix.

Structure = Platy, or horizon is massive.

Consistence = Hard or very hard dry.

Reaction = Strongly alkaline or very strongly alkaline.

**3B<sub>k</sub> and 3B<sub>qk</sub> horizons:**

Value = 7 or 8 dry, 5 through 7 moist.

Chroma = 2 through 4.

Texture = Extremely gravelly sandy loam or very gravelly loamy sand, very gravelly loamy coarse sand and very gravelly coarse sand.

Clay content = 3 to 8 percent.

Rock fragments = 50 to 70 percent, mainly pebbles.

Structure = Horizon is massive or single grain.

Consistence = Slightly hard, soft, or loose dry.

Reaction = Moderately alkaline or strongly alkaline.

Silica cementation = When present below the duripan, it is either weak and discontinuous cemented or consists up to 25 percent durinodes in a friable matrix.

**Annaw Series**

The Annaw series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Annaw soils are on inset fans. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Sandy-skeletal, mixed, mesic Typic Camborthids

**Typical pedon:** Annaw very gravelly loamy sand, 2 to 8 percent slopes, in map unit 1040. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 80 percent gravel.

A = 0 to 4 inches; light brownish gray (10YR 6/2) very gravelly loamy sand, dark grayish brown (10YR 4/2) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine interstitial and few very fine tubular pores; 35 percent pebbles; slightly effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

Bw = 4 to 12 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; common very fine interstitial and tubular pores; 30 percent pebbles; slightly effervescent; strongly alkaline (pH 8.7); clear wavy boundary.

2B<sub>k</sub> = 12 to 20 inches; light brownish gray (10YR 6/2) extremely gravelly loamy sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and few fine roots; many very fine interstitial pores; few thin lime coats on undersides of pebbles; 60 percent pebbles; strongly effervescent; strongly alkaline (pH 8.5); gradual wavy boundary.

2C = 20 to 60 inches; light brownish gray (10YR 6/2) very gravelly loamy sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine and fine interstitial pores; 40 percent pebbles, 5 percent cobbles

and 5 percent stones; violently effervescent; strongly alkaline (pH 8.7).

**Type location:** Churchill County, Nevada; approximately 14 miles south of Frenchman; 1,590 feet south and 2,000 feet west of the projected northeast corner of section 18, T. 14 N., R. 33 E.; (39 degrees, 05 minutes, 01 seconds north latitude and 118 degrees, 18 minutes, 04 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry; moist in some part for short periods winter and early spring months, and for 10 to 20 days cumulative between July and October following convection storms.

**Soil temperature:** 53 to 59 degrees F.

#### Control section:

Rock fragments = Averages 35 to 60 percent mostly pebbles.

Reaction = Moderately alkaline or strongly alkaline.

Effervescence = Calcareous in all parts, ranges from slightly effervescent to violently effervescent.

Other features = Buried B horizon below 40 inches is absent in most pedons.

#### A horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

#### Bw horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture (less than 2 millimeter fraction) = Sandy loam, fine sandy loam.

Rock fragments = 10 to 40 percent pebbles, 0 to 10 percent cobbles.

Clay films = Few thin clay films in pores at the top of the horizon in some pedons.

#### Bk horizon:

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture (less than 2 millimeter fraction) = Sandy loam or loamy sand.

Structure = Massive or subangular blocky.

#### 2C and 3Bk horizons:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture (less than 2 millimeter fraction) = Loamy sand, sand, loamy fine sand, loamy coarse sand. Some pedons have thin strata of sandy loam.

Structure = Massive or weak subangular blocky.

Rock fragments = 35 to 65 percent pebbles, 0 to 15 percent cobbles.

Consistence = Soft or slightly hard, dry, nonsticky or slightly sticky and nonplastic or slightly plastic, wet.

Other features = Horizons are stratified. Strata of gravelly material are included in some pedons. Lime occurs as pendants on pebbles and is disseminated in most pedons. Lime coated pebbles are in some horizons in some pedons.

## Appian Series

The Appian series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks over lacustrine sediments. Appian soils are on lake plains, lake terraces, and spits. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 51 degrees F.

**Taxonomic class:** Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Natrargids

**Typical pedon:** Appian loam, 0 to 2 percent slopes, in map unit 221. (Colors are for dry soil unless otherwise noted.)

A = 0 to 6 inches; light gray (10YR 7/2) loam, dark grayish brown (10YR 4/2) moist; weak thick platy structure; hard, friable, sticky and slightly plastic; many very fine, fine, medium and coarse vesicular pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Btnk = 6 to 12 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 4/3) moist; strong medium prismatic structure parting to moderate medium subangular blocky; hard, friable, sticky and plastic; common medium and coarse roots; common fine and medium tubular pores; common thin and few moderately thick clay films on faces of peds, lining pores and occurring as bridges between mineral grains;

few fine lime filaments; 5 percent pebbles; violently effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary.

2C1 = 12 to 16 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common medium and coarse roots; common fine and medium tubular pores; 10 percent pebbles; violently effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.

2C2 = 16 to 24 inches; light brownish gray (10YR 6/2) sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; few fine roots; many very fine, fine, medium and coarse interstitial pores; 10 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

2C3 = 24 to 60 inches; light brownish gray (10YR 6/2) sand, dark grayish brown (10YR 4/2) moist; few medium faint brown (10YR 4/3) moist, relict mottles; single grain; loose, nonsticky and nonplastic; few fine roots; many very fine, fine, medium and coarse interstitial pores; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0).

**Type location:** Churchill County, Nevada; approximately 41 miles northeast of Fallon; 500 feet south and 2,100 feet east of the northwest corner of section 31, T. 25 N., R. 32 E.; (39 degrees, 59 minutes, 56 seconds north latitude and 118 degrees, 25 minutes, 51 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry; moist for short periods in winter and early spring, dry May through October.

**Soil temperature:** 53 to 57 degrees F.  
Combined thickness of A and Btn horizons = 7 to 19 inches.  
Depth to sandy 2C horizon = 7 to 19 inches.

#### A horizon:

Hue = 10YR or 2.5Y.  
Value = 6 or 7 dry, 3 or 4 moist.  
Chroma = 1 or 2.  
Reaction = Moderately alkaline or strongly alkaline.

#### Btnk horizon:

Hue = 10YR or 7.5YR.  
Value = 4 through 6 dry, 4 or 5 moist.  
Chroma = 2 through 4.  
Texture = Clay loam or sandy clay loam.  
Clay content = 27 to 35 percent.  
Structure = Moderate or strong, fine through coarse, columnar or prismatic parting to subangular blocky.  
Consistence = Hard to very hard dry; friable or firm moist.  
Reaction = Strongly alkaline or very strongly alkaline.  
Sodicity (SAR) = 31 to 90.  
Other features = Few or common, fine or medium white lime or gypsum segregations and filaments. Subhorizons in some pedons lack secondary lime.

#### 2C horizons:

Hue = 7.5YR through 5Y.  
Value = 6 or 7 dry, 3 through 5 moist.  
Chroma = 2 or 3.  
Texture = Predominantly sand that is stratified with textures that include coarse sand, fine sand, loamy sand, loamy fine sand, fine sandy loam, or sandy loam.  
Structure = Massive or single grain.  
Consistence = Loose to slightly hard.  
Rock fragments = Up to 75 percent pebbles in some pedons.  
Relict iron mottles = Few to many, fine to large, faint to prominent high chroma with hue of 10YR, 7.5YR or 5YR.  
Reaction = Mildly alkaline to very strongly alkaline.  
Effervescence = Noneffervescent to violently effervescent.  
Other features = Some pedons have a 3C horizon at depths of 40 to 60 inches with textures of clay, silty clay, silty clay loam or silt loam.

### Arclay Series

The Arclay series consists of shallow, well drained soils that formed in residuum and colluvium derived from granitic rocks. Arclay soils are on mountains and hills. Slopes are 4 to 30 percent. The mean annual precipitation is about 9 inches



and the mean annual temperature is about 50 degrees F.

**Taxonomic class:** Loamy, mixed, mesic, shallow  
Aridic Argixerolls

**Typical pedon:** Arclay very gravelly coarse sandy loam, 4 to 15 percent slopes, in map unit 1200. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 50 percent pebbles.

A=0 to 4 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak medium platy structure parting to weak fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, common fine and few medium roots; many very fine and fine interstitial pores; 35 percent fine pebbles; neutral (pH 6.6); abrupt smooth boundary.

Bt1=4 to 9 inches; brown (10YR 5/3) gravelly sandy clay loam, dark brown (10YR 3/3) moist; weak medium and fine subangular blocky structure; hard, friable, sticky and plastic; many medium and coarse and common very fine and fine roots; many very fine and few fine tubular pores; continuous very thin and thin clay films on faces of peds and lining pores; 20 percent fine pebbles; neutral (pH 6.8); clear smooth boundary.

Bt2=9 to 16 inches; yellowish brown (10YR 5/4) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium and fine subangular blocky structure; hard, friable, sticky and plastic; common very fine and fine and few medium roots; many very fine and fine tubular pores; continuous very thin clay films coating sand grains; 25 percent fine pebbles; mildly alkaline (pH 7.4); gradual smooth boundary.

Cr=16 to 40 inches; decomposed granite with common thin clay coats and few thin lime seams; gradual wavy boundary.

R=40 inches; hard granite.

**Type location:** Churchill County, Nevada; approximately 27 miles north of Fernley; 2,400 feet north and 1,900 feet west of the southeast corner of section 31, T. 25 N., R. 25 E.; (39 degrees, 59 minutes, 36 seconds north latitude and 119 degrees, 12 minutes, 51 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Moist in winter and spring, dry from June through October.

*Soil temperature:* 47 to 52 degrees F.

*Mollic epipedon thickness:* 7 to 12 inches, typically includes the upper Bt subhorizon.

*Depth to bedrock:* 14 to 20 inches to a paralithic contact and 40 to 60 inches to a lithic contact.

#### A horizon:

Hue=10YR or 2.5Y.

Value=4 through 6 dry, averages less than 5.5 dry after mixing the upper 7 inches.

Chroma=2 or 3.

Reaction=Neutral or mildly alkaline.

#### Bt horizon:

Value=4 through 6 dry, and 3 or 4 moist.

Chroma=3 or 4.

Texture=Dominantly gravelly clay loam with gravelly sandy clay loam, gravelly loam common in subhorizons above the paralithic contact.

Clay content=27 to 35 percent.

Rock fragments=15 to 30 percent, mainly fine pebbles.

Structure=Subangular blocky or horizon is massive.

Consistence=Slightly hard or hard dry and friable or firm moist.

Reaction=Neutral or mildly alkaline.

## Attella Series

The Attella series consist of very shallow, well drained soils that formed in residuum and colluvium from quartzite and calcareous sedimentary rocks. Attella soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 42 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed (calcareous), frigid Lithic Xeric Torriorthents

**Typical pedon:** Attella very gravelly loam, 30 to 50 percent slopes, in map unit 430. (Colors are for dry soil unless otherwise noted.) The soil

surface is covered with approximately 80 percent pebbles and 5 percent flagstones.

A = 0 to 3 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 3/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine and fine vesicular and interstitial pores; 40 percent pebbles; strongly effervescent; mildly alkaline (pH 7.8); clear smooth boundary.

C = 3 to 7 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine and medium roots; common very fine and fine tubular pores; 55 percent pebbles; few thin lime coating on undersides of pebbles; strongly effervescent; mildly alkaline (pH 7.8); abrupt wavy boundary.

R = 7 inches; hard, fractured calcareous shale.

**Type location:** Churchill County, Nevada; approximately 32 miles east of Fallon; 2,000 feet north and 200 feet east of the projected southwest corner of section 16, T. 21 N., R. 38 E.; (39 degrees, 41 minutes, 07 seconds north latitude and 117 degrees, 43 minutes, 08 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually moist mid-October to mid-June dry mid-June to mid-October.

**Soil temperature:** 41 to 47 degrees F.

**Depth to bedrock:** 6 to 10 inches to a lithic contact.

**Calcium carbonate equivalent:** 5 to 20 percent.

#### Control section:

Clay content = 15 to 25 percent, when mixed.

Rock fragments = 35 to 60 percent when mixed, mainly pebbles and some channers.

Reaction = Mildly alkaline or moderately alkaline.

Organic carbon = 1 to 2.5 percent when mixed.

#### A horizon:

Value = 6 or 7 dry, 3 or 4 moist.

Chroma = 2 or 3.

#### C horizon:

Value = 6 or 7 dry, 3 through 5 moist.

Chroma = 2 through 4.

Structure = Fine or medium subangular blocky or is massive.

Texture = Very gravelly loam or very gravelly silt loam.

Consistence = Soft or slightly hard dry, friable or very friable moist.

Effervescence = Strongly effervescent or violently effervescent.

Segregated lime = Lime coats, on undersides of rock fragments and occurs as soft masses in some pedons.

## Bango Series

The Bango series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks over lacustrine sediments. Bango soils are on lake terraces and lake plains. Slopes are 0 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 51 degrees F.

**Taxonomic class:** Fine-loamy, mixed, mesic Haplic Natrargids

**Typical pedon:** Bango sandy loam, 2 to 4 percent slopes, in map unit 220. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 20 percent dendritic tufa.

A = 0 to 2 inches; very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; strong medium platy structure; slightly hard, friable, nonsticky and nonplastic; many fine, medium and coarse vesicular pores; strongly effervescent; strongly alkaline (pH 8.7); clear smooth boundary.

B<sub>tn1</sub> = 2 to 7 inches; pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; weak medium prismatic structure parting to moderate fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; many very fine, fine, medium and coarse interstitial pores; common thin clay films on faces of peds; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

B<sub>tn2</sub> = 7 to 12 inches; pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine subangular blocky; slightly hard, friable,

slightly sticky and slightly plastic; common fine and medium roots; common moderately thick and few thick clay films on faces of peds and lining pores; violently effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

Cky1 = 12 to 32 inches; stratified pale brown (10YR 6/3) fine sandy loam, dark grayish brown (10YR 4/2) moist; and brown (10YR 4/3) silt loam, brown (10YR 4/3) moist; massive; fine sandy loam is loose, nonsticky and nonplastic; silt loam is very hard, very firm, sticky and slightly plastic; few very fine roots; common fine tubular pores; few fine soft masses of lime; few fine soft masses of gypsum; fine sandy loam is slightly effervescent, silt loam is violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

2Ck2 = 32 to 60 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist, with few medium prominent strong brown (7.5YR 5/6) and olive yellow (2.5Y 6/6) masses of iron accumulation; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common fine tubular pores; 5 percent pebbles; few fine masses of soft lime; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 11 miles southwest of Fallon; 2,025 feet south and 290 feet east of the projected northwest corner of section 2, T.17 N., R.27 E.; (39 degrees, 22 minutes, 02 seconds north latitude and 118 degrees, 55 minutes, 47 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry; moist for short periods in winter and early spring, dry May through October.

**Soil temperature:** 53 to 57 degrees F.

**Depth to lacustrine sediment:** 10 to 26 inches.

**Depth to base of the natric horizon:** 6 to 20 inches.

**Control section:**

Clay content = 18 to 30 percent.

#### A horizon:

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

#### Btn horizon:

Hue = 7.5YR or 10YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture = Loam, clay loam, or sandy clay loam.

Clay content = 20 to 30 percent.

Structure = Medium or coarse prismatic parting to weak or moderate, fine or medium subangular blocky.

Reaction = Moderately alkaline or strongly alkaline.

Consistence = Slightly hard or hard, friable or very friable.

Sodicity (SAR) = Less than 13 in most of the natric horizon, increasing with depth.

Dendritic tufa layer = Commonly discontinuous and occurs sporadically. When present it is within 10 inches of the base of the natric horizon.

#### C horizons:

Texture = Finely stratified fine sandy loam, very fine sandy loam, silt loam, loam, and silty clay.

Clay content = 18 to 30 percent.

Reaction = Moderately alkaline or strongly alkaline.

Redoximorphic features = Relict redox concentrations of iron accumulation usually occur below 24 inches.

## Barnmot Series

The Barnmot series consist of very deep, well drained soils that formed in colluvium weathered from mixed rocks over lacustrine sediments. Barnmot soils are on hills and fan remnants. Slopes are 15 to 50 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees F.

**Taxonomic class:** Fine, montmorillonitic (calcareous), mesic Typic Torriorthents

**Typical pedon:** Barnmot very gravelly clay, 30 to 50 percent slopes, in map unit 315. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with a desert pavement of 45 percent pebbles, 5 percent cobbles, and 1 percent stones.

A=0 to 2 inches; pale brown (10YR 6/3) very gravelly clay, brown (10YR 5/3) moist; moderate thin platy structure; soft, very friable, sticky and plastic; very few fine roots; common very fine interstitial and few very fine vesicular pores; 55 percent pebbles and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

C1=2 to 7 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist; weak medium prismatic structure; slightly hard, very friable, very sticky and plastic; few very fine roots; many very fine interstitial and few very fine tubular pores; strongly effervescent; strongly alkaline (pH 8.5); clear wavy boundary.

C2=7 to 16 inches; pink (7.5YR 7/4) clay, brown (7.5YR 5/4) moist; moderate fine and medium prismatic structure; slightly hard, very friable, very sticky and plastic; few very fine roots; many very fine interstitial and few very fine tubular pores; strongly effervescent; strongly alkaline (pH 8.5); clear wavy boundary.

C3=16 to 60 inches; light gray (10YR 7/2) clay loam, brown (10YR 5/3) moist; strong very coarse subangular blocky structure; very hard, firm, very sticky and plastic; few very fine roots between peds; few very fine and fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; in the Stillwater Mountains; 1,300 feet east and 1,300 feet north of the projected southwest corner of section 16, T.18 N., R.33 E.; (39 degrees, 25 minutes, 11 seconds north latitude and 118 degrees, 17 minutes, 20 seconds west longitude, NAD 27.)

#### Range in Characteristics:

**Soil moisture:** Usually dry in summer and autumn and moist for short periods during spring and winter.

**Soil temperature:** 53 to 55 degrees F.

#### Control section:

Clay content=35 to 55 percent.

Rock fragments=Less than 15 percent.

#### A horizon:

Value=5 through 7 dry, 4 or 5 moist.

Chroma=2 or 3.

#### C horizons:

Hue=7.5YR, 10YR or 2.5Y.

Value=5 through 8 dry, 4 through 6 moist.

Chroma=2 through 4 moist and dry.

Texture=Clay or clay loam.

Structure=Prismatic, subangular blocky, or massive.

Consistence=Slightly hard to very hard, very friable to firm, sticky or very sticky.

Reaction=Moderately alkaline or strongly alkaline.

Salinity (EC)=0 to 8 mmhos/cm.

Sodicity (SAR)=1 to 12.

## Bedwyr Series

The Bedwyr series consists of shallow, well drained soils that formed in residuum and colluvium derived from sedimentary rocks. Bedwyr soils are on hills. Slopes are 4 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Clayey, montmorillonitic, mesic, shallow Typic Natrargids

**Typical pedon:** Bedwyr very gravelly loam, 8 to 30 percent slopes, in map unit 670. (Colors are for dry soil unless otherwise noted.) The soil surface is partly covered with approximately 30 percent pebbles and 6 percent cobbles.

A=0 to 2 inches; light gray (10YR 7/2) very gravelly loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; common fine interstitial and common fine and medium tubular pores; 45 percent pebbles and 2 percent cobbles; strongly alkaline (pH 8.6); abrupt smooth boundary.

2B<sub>tn</sub>=2 to 4 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; moderate fine and medium prismatic structure parting to strong medium subangular blocky; hard, friable, sticky and plastic; few very fine roots; common fine interstitial pores; many moderately thick clay films on faces of peds and lining pores; slightly effervescent; very strongly alkaline (pH 9.2); clear smooth boundary.

2B<sub>tn</sub> = 4 to 10 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; moderate fine and medium prismatic structure parting to strong medium angular blocky; hard, firm, very sticky and very plastic; many very fine and fine and common medium roots; many fine interstitial and few fine tubular pores; many moderately thick clay films on faces of peds and lining pores; few fine generally rounded soft masses of lime; strongly effervescent; very strongly alkaline (pH 9.4); clear wavy boundary.

2C = 10 to 13 inches; pale yellow (2.5Y 7/4) gravelly clay, light yellowish brown (2.5Y 6/4) moist; massive; slightly hard, friable, very sticky and very plastic; few very fine roots; few fine interstitial and tubular pores; 25 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

2C<sub>r</sub> = 13 inches; shale.

**Type location:** Churchill County, Nevada; on the southeastern edge of the Stillwater Range; approximately 2,500 feet south and 870 feet east of the northwest corner of section 7, T.17 N., R.33 E.; (39 degrees, 21 minutes, 04 seconds north latitude and 118 degrees, 19 minutes, 38 seconds west longitude, NAD 27.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, intermittently moist in the winter and spring, and dry in the summer and fall.

**Soil temperature:** 53 to 57 degrees F.

**Depth to base of the natric horizon:** 9 to 15 inches.

**Depth to bedrock:** 10 to 20 inches to a paralithic contact.

#### A horizon:

Value = 6 or 7 dry, 3 through 5 moist.

Chroma = 2 through 4 dry or moist.

Reaction = Mildly alkaline to strongly alkaline.

#### 2B<sub>tn</sub> and 2B<sub>t</sub> horizons:

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 4 through 6 moist.

Chroma = 3 or 4 dry or moist.

Texture = Clay or silty clay.

Clay content = 45 to 55 percent.

Rock fragments = 0 to 5 percent pebbles.

Structure = Moderate or strong, fine and medium prismatic parting to subangular blocky or angular blocky.

Reaction = Strongly alkaline.

Salinity (EC) = 2 to 8 mmhos/cm.

Sodicity (SAR) = 13 to 30.

#### 2C horizon:

Hue = 7.5YR through 2.5Y.

Value = 6 or 7 dry, 5 through 7 moist.

Chroma = 4 or 6, dry or moist.

Texture = Gravelly clay or gravelly silty clay.

Clay content = 45 to 60 percent.

Rock fragments = 15 to 30 percent pebbles.

Reaction = Moderately alkaline or strongly alkaline.

### Bedzee Series

The Bedzee series consists of shallow, well drained soils that formed in residuum and colluvium derived from sedimentary rocks. Bedzee soils are on hills. Slopes are 15 to 30 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Clayey, montmorillonitic, mesic, shallow Xerollic Haplargids

**Typical pedon:** Bedzee very stony loam, 15 to 30 percent slopes, in map unit 130. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 4 percent stones.

A<sub>1</sub> = 0 to 3 inches; pale brown (10YR 6/3) very stony loam, dark grayish brown (10YR 4/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; strongly effervescent; moderately alkaline (pH 8.1); clear smooth boundary.

A<sub>2</sub> = 3 to 7 inches; light yellowish brown (10YR 6/4) loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bt1 = 7 to 14 inches; light yellowish brown (10YR 6/4) gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate fine and medium angular blocky structure; hard, firm, sticky and plastic; few moderately thick clay films on faces of peds; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.

Bt2 = 14 to 17 inches; pale brown (10YR 6/3) gravelly clay, brown (10YR 4/3) moist; massive; hard, firm, sticky and plastic; few thin clay films bridging mineral grains; 30 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); gradual wavy boundary.

Cr = 17 inches; shale.

**Type location:** Churchill County, Nevada; approximately 14 miles northwest of Frenchman; 1,600 feet west and 500 feet north of the projected southeast corner of section 27, T. 19 N., R. 32 E.; (39 degrees, 28 minutes, 31 seconds north latitude and 118 degrees, 22 minutes, 25 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist in winter and spring, dry from late May through mid-November.

*Soil temperature:* 54 to 59 degrees F.

*Depth to bedrock:* 10 to 20 inches to a paralithic contact.

#### Control section:

Clay content = 35 to 60 percent.

Rock fragments = 15 to 35 percent.

#### A horizon:

Value = 4 or 5 moist.

Chroma = 2 through 4.

#### Bt horizon:

Chroma = 3 or 4.

Clay content = 40 to 60 percent.

Structure = Fine or medium, prismatic or angular blocky; lower Bt horizon if present may be massive.

Consistence = Sticky or very sticky, plastic or very plastic.

Reaction = Moderately alkaline or strongly alkaline.

## Belate Series

The Belate series consists of very deep, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Belate soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 43 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed, frigid Aridic Argixerolls

**Typical pedon:** Belate very gravelly loam, 30 to 75 percent slopes, in map unit 840. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 25 percent pebbles, 5 percent cobbles, and 2 percent stones.

A1 = 0 to 2 inches; grayish brown (10YR 5/2) very gravelly loam, black (10YR 2/1) moist; weak fine and medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; many very fine roots; common very fine tubular and few very fine interstitial pores; 30 percent pebbles, 5 percent cobbles and 2 percent stones; neutral (pH 6.8); clear smooth boundary.

A2 = 2 to 12 inches; dark brown (10YR 4/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; common very fine tubular pores; 35 percent pebbles; neutral (pH 6.9); clear wavy boundary.

Bt1 = 12 to 18 inches; brown (10YR 5/3) very gravelly clay loam, very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and fine roots; common very fine tubular pores; 40 percent pebbles; few thin and common moderately thick clay films on faces of peds; neutral (pH 7.0); clear smooth boundary.

Bt2 = 18 to 31 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, very

friable, sticky and plastic; few very fine and fine roots; common very fine tubular pores; 40 percent pebbles; common moderately thick clay films on faces of peds; neutral (pH 7.0); gradual smooth boundary.

Bt3 = 31 to 60 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 3/3) moist; massive; soft, very friable, sticky and plastic; few very fine and fine roots; common very fine tubular pores; 55 percent pebbles; common thin clay films on faces of peds; neutral (pH 6.8).

**Type location:** Churchill County, Nevada; approximately 22 miles north of Frenchman; 1/2 mile northwest of Job Peak, in the Stillwater Mountains; 200 feet south and 200 feet west of the projected northeast corner of section 23, T. 20 N., R. 33 E.; (39 degrees, 35 minutes, 23 seconds north latitude and 118 degrees, 14 minutes, 18 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Moist in the winter and spring, dry mid-July through October. The moisture distribution is such that limits depth of wetting to about 15 to 20 inches in most years.

**Soil temperature:** 43 to 47 degrees F.

**Mollic epipedon thickness:** 10 to 20 inches and includes the upper part of the argillic horizon.

**Depth to bedrock:** 60 to 80 inches.

#### Control section:

Clay content = 18 to 30 percent.

Rock fragments = 35 to 50 percent, mainly pebbles.

Reaction = Neutral or mildly alkaline.

#### A horizon:

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 1 through 3 dry or moist.

#### Bt1 and Bt2 horizons:

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

Rock fragment = 35 to 55 percent.

Structure = Moderate, fine and medium subangular blocky or angular blocky.

#### Bt3 horizon:

Value = 5 or 6 dry, 2 through 4 moist.

Chroma = 3 or 4.

Texture = Very gravelly loam or very gravelly clay loam.

Clay content = 18 to 30 percent.

Rock fragments = 35 to 60 percent, mainly pebbles.

Structure = Fine and medium subangular blocky or angular blocky with the lower part sometimes massive.

## Biddleman Series

The Biddleman series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks over coarse lacustrine sediments. Biddleman soils are on beach terraces. Slopes are 0 to 15 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 51 degrees F.

**Taxonomic class:** Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Natrargids

**Typical pedon:** Biddleman gravelly sandy loam, 0 to 15 percent slopes, in map unit 210. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 25 percent pebbles and 5 percent cobbles.

A = 0 to 3 inches; light brownish gray (10YR 6/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak medium platy structure; slightly hard, very friable, slightly sticky and nonplastic; few very fine roots; many fine and medium vesicular pores; 25 percent pebbles; strongly alkaline (pH 8.5); clear wavy boundary.

Bt1 = 3 to 10 inches; pale brown (10YR 6/3) gravelly clay loam, brown (10YR 4/3) moist; moderate fine and medium prismatic structure parting to moderate fine angular blocky; hard, friable, sticky and plastic; many very fine and fine roots; common very fine tubular pores; 25 percent pebbles; common thin clay films on faces of peds and lining pores; strongly alkaline (pH 8.6); clear wavy boundary.

2Bk = 10 to 19 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine, fine and medium interstitial pores; common fine lime coats on

undersides of rock fragments; 70 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); gradual wavy boundary.

2C = 19 to 60 inches; light gray (10YR 7/2) extremely gravelly loamy coarse sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; few fine lime coats on undersides of rock fragments; 65 percent pebbles; violently effervescent; strongly alkaline (pH 8.5).

**Type location:** Churchill County, Nevada; approximately 15 miles south of Fallon; 1,300 feet east and 1,300 feet south of the northwest corner of section 18, T. 16 N., R. 29 E.; (39 degrees, 15 minutes, 08 seconds north latitude and 118 degrees, 46 minutes, 35 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, intermittently moist in winter and spring, dry from late May through November.

*Soil temperature:* 53 to 55 degrees F.

*Depth to base of natric horizon and strongly contrasting horizons:* 8 to 17 inches.

#### Control section:

Clay content = Averages 20 to 30 percent in the upper part and 2 to 10 percent in the contrasting lower part.

Rock fragments = Averages 20 to 35 percent, in the upper part and 60 to 80 percent in the contrasting lower part, fragments are mainly pebbles of mixed lithology.

#### A horizon:

Hue = 10YR or 2.5Y.

Value = 3 through 5 moist.

Reaction = Moderately alkaline or strongly alkaline.

#### Btn horizon:

Hue = 10YR or 2.5Y.

Value = 3 through 5 moist.

Chroma = 2 through 4.

Texture of fine earth = Loam, sandy clay loam or clay loam.

Rock fragments = Averages 20 to 35 percent, mainly pebbles.

Structure = Fine or medium prismatic often parting to angular blocky or subangular blocky.

Consistence = Slightly sticky or sticky, slightly plastic or plastic.

Reaction = Moderately alkaline or strongly alkaline.

Salinity (EC) = 0 to 16 mmhos/cm.

Sodicity (SAR) = 13 to 30.

Other features = Thin subhorizons of sandy loam are present in some pedons; Btn horizons with lime coats on undersides of rock fragments are present in some pedons.

#### 2Bk and 2C horizon:

Hue = 10YR or 2.5Y.

Value = 6 through 8 dry, 4 through 6 moist.

Chroma = 2 through 4.

Texture of fine earth = Loamy fine sand, loamy coarse sand, or sand.

Rock fragments = Averages 60 to 80 percent, mainly pebbles.

Reaction = Moderately alkaline or strongly alkaline.

Other features = Discontinuous weakly to strongly cemented beds of lithoid tufa occurs below depths of 24 inches in some pedons.

## Biga Series

The Biga series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources, loess, and volcanic ash. Biga soils are on summits of fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees F.

**Taxonomic class:** Clayey over loamy, montmorillonitic, mesic Duric Natrargids

**Typical pedon:** Biga gravelly coarse sandy loam, 2 to 8 percent slopes, in map unit 1211. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles.

A = 0 to 2 inches; pale brown (10YR 6/3) gravelly coarse sandy loam, dark brown (10YR 4/3) moist; weak medium platy structure; soft, very



friable, nonsticky and nonplastic; many very fine interstitial pores; 20 percent fine pebbles; moderately alkaline (pH 8.4); abrupt wavy boundary.

E=2 to 3 inches; very pale brown (10YR 7/3) fine sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, slightly sticky and nonplastic; many very fine interstitial pores; moderately alkaline (pH 8.4); abrupt wavy boundary.

2Btk1=3 to 6 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; strong fine and moderate medium prismatic structure; slightly hard, firm, sticky and plastic; few very fine and fine roots; many very fine interstitial pores; continuous thin and moderately thick clay films on faces of peds and lining pores; few fine lime filaments; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

2Btk2=6 to 9 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate medium prismatic structure; hard, firm, sticky and plastic; common very fine, fine and medium sized roots; common very fine and few fine tubular pores; continuous thin and moderately thick clay films on faces of peds and lining pores; few fine lime filaments; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

2Btk3=9 to 13 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; weak medium prismatic structure parting to moderate medium subangular blocky; hard, firm, sticky and plastic; many very fine and common fine and medium roots; common very fine and few fine tubular pores; continuous thin clay films bridging sand grains; few fine lime filaments; strongly effervescent; very strongly alkaline (pH 9.4); clear irregular boundary.

3Bqk1=13 to 22 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist, weak thick platy structure; hard, friable and brittle, slightly sticky and nonplastic; common very fine and few fine roots; few very fine and fine interstitial pores; continuous brittle matrix; with common medium light gray (10YR 7/2) soft lime seams; 20 percent fine pebbles; strongly effervescent; strongly alkaline (pH 9.0); gradual wavy boundary.

3Bqk2=22 to 33 inches; pale brown (10YR 6/3) gravelly sandy loam, dark yellowish brown

(10YR 4/4) moist, common light gray (10YR 7/2) mottles; weak thick platy structure; hard, friable, slightly sticky and nonplastic; few very fine and fine roots; many very fine and few fine interstitial pores; 30 percent hard and brittle durinodes and soft masses of lime; 15 percent fine pebbles; strongly effervescent; strongly alkaline (pH 9.0); gradual wavy boundary.

3Bqk3=33 to 43 inches; pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; common light gray (10YR 7/2) mottles; weak thick platy structure; hard, friable, slightly sticky and nonplastic; many very fine and few fine tubular pores; 20 percent hard and brittle discontinuous silica cemented layers; 10 percent fine pebbles; slightly effervescent; strongly alkaline (pH 9.0); gradual wavy boundary.

3C=43 to 60 inches; brown (10YR 5/3) coarse sandy loam, dark brown (10YR 3/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; many very fine and few fine interstitial pores; 10 percent fine pebbles; slightly effervescent; strongly alkaline (pH 8.6).

**Type location:** Churchill County, Nevada; approximately 13 miles north of Brady Hot Springs; 1,600 feet north and 1,650 feet east of the southwest corner of section 1, T.24 N., R.26 E.; (39 degrees, 58 minutes, 25 seconds north latitude and 119 degrees, 0 minutes, 48 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry; moist for short periods in late fall through early spring, dry late May through November.

*Soil temperature:* 53 to 56 degrees F.

*Depth to base of natric horizon and strongly contrasting horizons with continuous brittle matrix:* 12 to 20 inches.

*Depth to lime:* 4 to 11 inches.

*Control section:*

Clay content=35 to 45 percent in the upper part, and 2 to 10 percent in the contrasting lower part.

Rock fragments=0 to 15 percent in the upper part and 5 to 30 percent in the lower part.

Other features=Some pedons have C horizons below 40 inches.

**A horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Reaction = Mildly alkaline or moderately alkaline.

**E horizon:**

Consistence = Soft to hard, nonsticky to slightly sticky, nonplastic or slightly plastic.

Reaction = Moderately alkaline to strongly alkaline.

**2Btk horizons:**

Hue = 7.5YR or 10YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 through 6.

Texture = Clay, clay loam, sandy clay.

Clay content = 35 to 45 percent.

Silt content = 5 to 15 percent.

Sand content = Mainly medium sand, coarse sand and very coarse sand.

Rock fragments = Less than 15 percent fine pebbles.

Structure = Prismatic or columnar, parting to subangular blocky.

Consistence = Slightly hard or hard, sticky or very sticky and plastic or very plastic.

Reaction = Strongly alkaline or very strongly alkaline.

Salinity (EC) = 2 to 8 mmhos/cm.

Sodicity (SAR) = 13 to 45.

**3Bq, Bk, and Bqk horizons:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Stratified sandy loam to gravelly loamy coarse sand.

Clay content = 2 to 10 percent.

Rock fragments = 5 to 25 percent fine pebbles, 0 to 10 percent cobbles.

Structure = Platy or horizon is massive.

Consistence = Nonsticky or slightly sticky and nonplastic or slightly plastic.

Reaction = Moderately alkaline to very strongly alkaline.

**Bimmer Series**

The Bimmer series consists of very shallow, well drained soils that formed in residuum derived from granitic rocks. Bimmer soils are on pediments and hills. Slopes are 8 to 30 percent. The mean annual

precipitation is about 6 inches and the mean annual temperature is about 50 degrees F.

**Taxonomic class:** Loamy, mixed, nonacid, mesic, shallow Typic Torriorthents

**Typical pedon:** Bimmer stony sandy loam, 8 to 30 percent slopes, in map unit 110. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 25 percent pebbles and 2 percent stones.

A1 = 0 to 2 inches; light brownish gray (10YR 6/2) stony sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; 45 percent pebbles and 2 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

A2 = 2 to 5 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine interstitial pores; 20 percent pebbles; slightly effervescent; mildly alkaline (pH 7.4); clear wavy boundary.

Cr = 5 to 21 inches; weathered granite.

R = 21 inches; hard granite.

**Type location:** Churchill County, Nevada; 1,700 feet south and 200 feet west of the projected northeast corner of section 13, T.15 N., R.31 1/2 E.; (39 degrees, 09 minutes, 57 seconds north latitude and 118 degrees, 25 minutes, 31 seconds west longitude.)

**Range in Characteristics:**

**Soil moisture:** Usually dry, dry in summer and fall, moist for short periods in the winter and spring.

**Soil temperature:** 50 to 55 degrees F.

**Depth to bedrock:** 3 to 10 inches to a paralithic contact.

**Control section:**

Texture = Sandy loam or coarse sandy loam.

Reaction = Neutral to mildly alkaline.

Clay content = 10 to 18 percent.

Rock fragments = 15 to 35 percent, mainly fine pebbles.

**A horizons:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

**Blacktop Series**

The Blacktop series consists of very shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from volcanic rocks. Blacktop soils are on hills and mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 53 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed (calcareous), mesic Lithic Torriorthents

**Typical pedon:** Blacktop very gravelly sandy loam, 30 to 50 percent slopes, in map unit 1011. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 65 percent pebbles.

A1 = 0 to 2 inches; light gray (10YR 7/2) very gravelly sandy loam, grayish brown (10YR 5/2) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few fine and medium roots; many very fine and fine and few medium vesicular pores; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

A2 = 2 to 5 inches; light gray (10YR 7/2) very gravelly sandy loam, grayish brown (10YR 5/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; many very fine interstitial and common fine and medium tubular pores; 55 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.

R = 5 inches; rhyolitic tuff.

**Type location:** Churchill County, Nevada; approximately 14 miles south of U.S. Highway 50 in Little Bell Flat in an unsectionized area; (39 degrees, 5 minutes, 00 seconds north latitude and 118 degrees, 08 minutes, 55 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry throughout from May through November.

*Soil temperature:* Above 41 degrees F. From mid-March to mid-November. The upper part is moist for about 10 to 20 days between June and September, due to thundershowers. The soils are continuously moist for 30 to 60 consecutive days when the soil temperature is warmer than 47 degrees F.

*Depth to hard bedrock:* 4 to 10 inches to a lithic contact.

*Mean annual soil temperature:* 53 to 55 degrees F.  
Reaction = Mildly alkaline or moderately alkaline.  
Effervescence = Slightly effervescent to strongly effervescent throughout.

**A horizons:**

Chroma = 2 or 3.

Texture = Very gravelly sandy loam or very stony fine sandy loam.

Rock fragments = 35 to 70 percent rock fragments.

**Bluewing Series**

The Bluewing series consists of very deep, excessively drained soils that formed alluvium derived from mixed rocks. Bluewing soils are on fan aprons, drainageways, barrier beaches, alluvial fans, and inset fans. Slopes are 2 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 51 degrees F.

**Taxonomic class:** Sandy-skeletal, mixed, mesic Typic Torriorthents

**Typical pedon:** Bluewing very gravelly loamy sand, frequently flooded, 2 to 8 percent slopes, in map unit 181. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 35 percent pebbles.

A = 0 to 7 inches; pale brown (10YR 6/3) very gravelly loamy sand, dark brown (10YR 3/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots;

many very fine and fine interstitial pores; 40 percent pebbles and 15 percent cobbles; moderately alkaline (pH 8.2); clear smooth boundary.

**Bk1** = 7 to 18 inches; pale brown (10YR 6/3) extremely gravelly sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; few very fine, fine and medium roots; many very fine, fine, medium and coarse interstitial pores; 65 percent pebbles; few thin lime coatings on undersides of pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

**Bk2** = 18 to 60 inches; pale brown (10YR 6/3) extremely gravelly coarse sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; common medium and few very fine and fine roots; many very fine, fine, medium and coarse interstitial pores; 65 percent pebbles; continuous thin lime coatings on undersides of pebbles; strongly effervescent; strongly alkaline (pH 8.6).

**Type location:** Churchill County, Nevada; approximately 28 miles southeast of Fallon in an unsectionized area; 6,150 feet south and 2,100 feet west of the southwest corner of T.16 N., R.32 E.; (39 degrees, 10 minutes, 52 seconds north latitude and 118 degrees, 27 minutes, 00 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, intermittently moist in winter and early spring, dry from early May through October.

**Soil temperature:** 53 to 59 degrees F.

#### Control section:

Clay content = Averages 3 to 8 percent.  
Reaction = Mildly alkaline to strongly alkaline.  
Effervescence = Noneffervescent to violently effervescent.

#### A horizon:

Hue = 10YR or 2.5Y.  
Value = 5 through 7 dry, 3 through 5 moist.  
Chroma = 2 through 4.

#### Bk horizons:

Hue = 10YR or 2.5Y.  
Value = 5 through 8 dry; 3 through 5 moist.  
Chroma = 2 through 4.

Texture = Dominantly loamy coarse sand or coarse sand but may include strata ranging from loamy sand to loam.

Rock fragments = Averages 50 to 80 percent, mainly pebbles with up to 25 percent cobbles and stones; the pebbles are dominantly 3/4 to 1 1/4 inch in diameter.

Structure = Horizon is massive or single grain.

Consistence = Soft or slightly hard.

Calcium carbonate equivalent = 1 to 15 percent; no decrease with depth.

## Bombadil Series

The Bombadil series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Bombadil soils are on hills and mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 47 degrees F.

**Taxonomic class:** Loamy, mixed, mesic Lithic Xerollic Haplargids

**Typical pedon:** Bombadil stony loam, 15 to 50 percent slopes, in map unit 680. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 2 percent stones.

**A1** = 0 to 2 inches; light brownish gray (10YR 6/2) stony loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine and medium roots; many very fine, fine, medium and coarse tubular pores; 10 percent stones; mildly alkaline (pH 7.4); abrupt smooth boundary.

**A2** = 2 to 5 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common fine roots; common fine and medium tubular pores; neutral (pH 7.2); clear smooth boundary.

**Bt1** = 5 to 8 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium and few coarse

roots; common fine and medium tubular pores; common moderately thick clay films on faces of peds and lining pores; 10 percent pebbles; neutral (pH 7.3); clear smooth boundary.

Bt2 = 8 to 12 inches; brown (7.5YR 5/4) gravelly loam, dark brown (7.5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; common fine and medium tubular pores; many moderately thick clay films coating rock fragments and lining pores; 25 percent pebbles; neutral (pH 7.2); abrupt wavy boundary.

R = 12 inches; fractured basaltic rock.

**Type location:** Churchill County, Nevada; approximately 19 miles east of Fallon; 1,200 feet south and 2,600 feet east of the projected northwest corner section 4 T.18 N., R.32 E.; (39 degrees, 27 minutes, 22 seconds north latitude and 118 degrees, 23 minutes, 47 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Moist in winter and spring, dry in summer and early autumn.

*Soil temperature:* 47 to 53 degrees F.

*Depth to bedrock:* 7 to 14 inches to a lithic contact.

#### Control section:

Clay content = 18 to 27 percent.

Rock fragments = 10 to 25 percent.

Reaction = Neutral or mildly alkaline.

#### A horizons:

Hue = 10YR, 7.5YR.

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

#### Bt1 horizon:

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 3 through 5 moist.

Chroma = 3 or 4 except 2 in the upper part of some pedons.

Texture = Loam or clay loam.

Clay content = 18 to 35 percent.

Rock fragments = 10 to 25 percent by average.

#### Bt2 horizon:

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

Clay content = 25 to 35 percent.

Consistence = Very friable or friable, slightly sticky or sticky, slightly plastic or nonplastic.

Rock fragments = 10 to 20 percent by average.

## Buckaroo Series

The Buckaroo series consists of very deep, well drained soils that formed in alluvium derived from volcanic rocks. Buckaroo soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees F.

**Taxonomic class:** Fine, montmorillonitic, mesic Typic Natrargids

**Typical pedon:** Buckaroo stony fine sandy loam, 4 to 15 percent slopes, in map unit 150. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 25 percent pebbles, 5 percent cobbles, and 2 percent stones.

A = 0 to 3 inches; pale brown (10YR 6/3) stony fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial and tubular pores; 25 percent pebbles; 2 percent cobbles and 1 percent stones; strongly alkaline (pH 8.6); abrupt smooth boundary.

E = 3 to 4 inches; light gray (10YR 7/2) loam, grayish brown (10YR 5/2) moist; moderate thick platy structure; slightly hard, very friable, sticky and slightly plastic; few very fine and fine roots; many very fine, fine, medium and coarse vesicular pores; slightly effervescent; strongly alkaline (pH 8.9); abrupt smooth boundary.

Bt<sub>n</sub> = 4 to 6 inches; brown (10YR 4/3) clay, dark brown (10YR 4/3) moist; moderate medium prismatic structure parting to strong very fine angular blocky; hard, firm, very sticky and very plastic; common fine and few very fine roots; few fine tubular and many very fine, fine, and medium interstitial pores; continuous moderately thick clay films on faces of peds; slightly effervescent; few fine lime filaments or

threads; strongly alkaline (pH 8.7); clear smooth boundary.

**Btk** = 6 to 16 inches; brown (7.5YR 4/4) clay, dark brown (7.5YR 4/4) moist; moderate fine and medium prismatic structure parting to strong fine angular blocky; hard, firm, very sticky and very plastic; many very fine and fine roots; few very fine and fine tubular pores; continuous moderately thick clay films on faces of peds and lining pores; common fine lime filaments and threads, 15 percent of faces of peds coated with white (10YR 8/2) lime masses; strongly effervescent; strongly alkaline (pH 8.7); gradual smooth boundary.

**Bqk** = 16 to 27 inches; light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 5/4) moist; massive; hard, very friable, slightly sticky and nonplastic; few very fine roots; few fine and medium tubular pores; 15 percent durinodes; 20 percent pebbles; common fine filaments and threads of lime; violently effervescent; strongly alkaline (pH 8.9); gradual wavy boundary.

**2Bk** = 27 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine and medium vesicular pores; 35 percent pebbles and 10 percent cobbles; disseminated lime throughout the horizon; violently effervescent; strongly alkaline (pH 8.9).

**Type location:** Churchill County, Nevada; approximately 28 miles southeast of Fallon; 250 feet west and 400 feet north of the southeast corner of section 1, T.15 N., R.30 E.; (39 degrees, 11 minutes, 08 seconds north latitude and 118 degrees, 34 minutes, 11 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods during spring and winter, dry from summer to mid-fall.

**Soil temperature:** 53 to 59 degrees F.

**Depth to base of natric horizon:** 10 to 20 inches.

**Control section:**

Clay content = 35 to 50 percent.

Rock fragments = 0 to 10 percent, mainly pebbles.

Reaction = Strongly alkaline or very strongly alkaline.

#### A horizon:

Value = 4 or 5 moist.

Chroma = 2 or 3.

Effervescence = Noneffervescent to strongly effervescent.

#### E horizon:

Chroma = 2 or 3.

Effervescence = Slightly effervescent to violently effervescent.

Structure = Moderate or strong, thin to thick platy.

#### Btk horizon:

Hue = 10YR or 7.5YR.

Value = 4 through 6 dry, 4 or 5 moist.

Chroma = 3 through 6.

Texture = Clay loam or clay.

Sodicity (SAR) = 31 to 90.

Effervescence = Slightly effervescent or strongly effervescent.

#### Btk horizon:

Hue = 10YR or 7.5YR.

Value = 4 through 6 dry, 4 or 5 moist.

Chroma = 3 through 6.

Texture = Clay loam or clay.

Sodicity (SAR) = 31 to 90.

Carbonates = Common lime filaments, threads or soft masses; rock fragments commonly have pendants.

Effervescence = Strongly or violently effervescent.

#### 2Bk and Bqk horizons:

Hue = 10YR or 7.5YR.

Value = 6 or 7 dry, 5 or 6 moist.

Chroma = 2 through 4.

Texture = Sandy loam, fine sandy loam or loam.

Rock fragments = 25 to 50 percent, mainly pebbles, increasing with depth, with up to 60 percent in the lower subhorizon.

Effervescence = Strongly effervescent or violently effervescent.

Other features = Up to 15 percent durinodes are common in some subhorizons.

## Budihol Series

The Budihol series consists of very shallow and shallow, well drained soils that formed in residuum

and colluvium derived from granitic rocks. Budihol soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 49 degrees F.

**Taxonomic class:** Loamy, mixed, nonacid, mesic, shallow Xeric Torriorthents

**Typical pedon:** Budihol stony sandy loam, 30 to 50 percent slopes, in map unit 230. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 25 percent fine pebbles, 5 percent cobbles, and 2 percent stones.

A1 = 0 to 3 inches; light brownish gray (10YR 6/2) stony sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine roots; many very fine tubular pores; 25 percent pebbles and 2 percent stones; neutral (pH 6.8); clear smooth boundary.

A2 = 3 to 7 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine roots; common very fine and fine tubular pores; 30 percent pebbles; neutral (pH 7.0); clear smooth boundary.

Cr = 7 to 21 inches; weathered granodiorite; very gravelly sandy loam in some fractures about 1/2 inch to 1 inch thick.

R = 21 inches; hard granodiorite.

**Type location:** Churchill County, Nevada; approximately 2,200 feet west and 1,300 feet north of the projected southeast corner of section 17, T.15 N., R.32 E.; (39 degrees, 09 minutes, 35 seconds north latitude and 118 degrees, 23 minutes, 46 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist in winter and spring, dry in summer and fall.

**Soil temperature:** 47 to 53 degrees F.

**Depth to bedrock:** 6 to 14 inches to a paralithic contact and 20 to 30 inches to a lithic contact.

#### Control section:

Texture = Sandy loam or coarse sandy loam.

Clay content = 12 to 18 percent.

Rock fragments = 15 to 35 percent, mostly fine pebbles.

#### A horizons:

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

## Buffaran Series

The Buffaran series consists of shallow to a duripan, well drained soils that formed in alluvium derived from mixed rocks. Buffaran soils are fan remnants. Slopes are 4 to 30 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees F.

**Taxonomic class:** Clayey, montmorillonitic, mesic, shallow Xerollic Durargids

**Typical pedon:** Buffaran gravelly loam, 4 to 8 percent slopes, in map unit 480. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles.

A1 = 0 to 2 inches; light brownish gray (10YR 6/2) gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common fine interstitial pores; 15 percent pebbles, 5 percent cobbles and 2 percent stones; neutral (pH 7.2); clear smooth boundary.

A2 = 2 to 7 inches; pale brown (10YR 6/3) gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common fine tubular pores; 15 percent pebbles, 5 percent cobbles and 2 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

Bt = 7 to 15 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; strong fine subangular blocky structure; hard, friable, sticky and plastic; common fine and medium roots; common fine tubular pores; common thick clay films on faces

of peds, lining pores and coating rock fragments; 15 percent pebbles; mildly alkaline (pH 7.6); abrupt smooth boundary.

Bqkm = 15 to 60 inches; indurated duripan; massive; extremely hard, extremely firm; violently effervescent; moderately alkaline (pH 8.0).

**Type location:** Churchill County, Nevada; approximately 7.5 miles north of Cold Springs; 1,300 feet south and 1,300 feet west of the northeast corner of section 17, T.19 N., R.37 E.; (39 degrees, 30 minutes, 55 seconds north latitude and 117 degrees, 50 minutes, 09 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry; moist in winter and spring, dry early June through October.

*Soil temperature:* 47 to 52 degrees F.

*Depth to duripan:* 14 to 20 inches.

#### A horizons:

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 3 or 4 moist, (after mixing 7 inches value greater than 5.5 dry)

Chroma = 2 or 3.

Reaction = Neutral to moderately alkaline.

#### Bt horizon:

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 3 through 5 moist.

Chroma = 2 through 4 or 6.

Texture = Clay or clay loam (35 to 50 percent clay).

Structure = Subangular blocky or granular.

Consistence = Slightly hard or hard dry, very friable or friable moist, slightly plastic or plastic wet.

Rock fragments = 5 to 40 percent, mostly pebbles.

Reaction = Neutral to moderately alkaline.

## Bundorf Series

The Bundorf series consists of shallow to a duripan, well drained soils that formed in alluvium derived from mixed rocks. Bundorf soils are on fan remnants. Slopes are 4 to 8 percent. The mean

annual precipitation is about 5 inches and the mean annual temperature is about 50 degrees F.

**Taxonomic class:** Clayey, montmorillonitic, mesic, shallow Typic Durargids

**Typical pedon:** Bundorf very stony loam, 4 to 8 percent slopes, in map unit 535. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles, 20 percent cobbles, and 5 percent stones.

A = 0 to 2 inches; light gray (10YR 7/2) very stony loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; many very fine and fine interstitial pores; 30 percent pebbles, 15 percent cobbles, and 10 percent stones; strongly alkaline (pH 8.8); clear smooth boundary.

Bt1 = 2 to 5 inches; yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 4/4) moist; moderate fine angular blocky structure; hard, firm, very sticky and very plastic; many very fine and few fine roots; many very fine interstitial pores; continuous thin and moderately thick clay films on faces of peds; 10 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bt2 = 5 to 11 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; strong medium angular blocky structure; hard, firm, very sticky and very plastic; many very fine, common medium and fine and few coarse roots; few very fine, fine and medium tubular pores; continuous thin and moderately thick clay films on faces of peds and lining pores; 10 percent pebbles; moderately alkaline (pH 8.4); clear irregular boundary.

2Bqk = 11 to 14 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; many very fine interstitial pores; 35 percent pebbles and 10 percent cobbles; silica-lime coats on rock fragments; strongly effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

2Bqkm = 14 to 25 inches; white (10YR 8/2)



indurated duripan.

3Bqk = 25 to 39 inches; white (10YR 8/2) extremely gravelly sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard and brittle, nonsticky and nonplastic; many fine and very fine interstitial pores; 60 percent pebbles and 15 percent cobbles; 25 percent pebble sized silica nodules; continuous thick lime coatings on rock fragments; strongly effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

3Bqkm = 39 to 45 inches; white (10YR 8/2) indurated duripan.

**Type location:** Churchill County, Nevada; approximately 12.5 miles northwest of Brady's Hot Springs; 1,900 feet east and 2,100 feet south of the northwest corner of section 33 T.24 N., R.25 E.; (39 degrees, 54 minutes, 29 seconds north latitude and 119 degrees, 10 minutes, 55 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist only for short periods between March and June.

*Soil temperature:* 51 to 53 degrees F.

*Depth to base of Bt:* 10 to 20 inches.

*Depth to indurated duripan:* 14 to 20 inches.

#### Control section:

Texture = Clay loam or clay with loam or sandy loam in the lower part of some pedon.

Clay content = 35 to 50 percent.

Rock fragments = 0 to 15 percent in the upper part and up to 55 percent in lower horizons.

Effervescence = Noneffervescent to strongly effervescent in the upper part of the soil profile and slightly effervescent to violently effervescent in the lower part.

Reaction = Mildly alkaline to very strongly alkaline, usually increasing with depth.

#### A horizon:

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

#### Bt horizons:

Hue = 7.5YR or 10YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

#### Bqk horizons:

Texture = Sandy loam, loam, or clay loam.

## Burnborough Series

The Burnborough series consists of very deep, well drained soils that formed in residuum and colluvium derived from volcanic rocks.

Burnborough soils are on mountains. Slopes are 15 to 30 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 43 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed, frigid Aridic Argixerolls

**Typical pedon:** Burnborough very gravelly loam, 15 to 30 percent slopes, in map unit 760. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 4 inches; dark grayish brown (10YR 4/2) very gravelly loam, very dark brown (10YR 2/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine interstitial pores; 35 percent pebbles and 5 percent cobbles; neutral (pH 7.1); clear smooth boundary.

A2 = 4 to 8 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, medium and coarse roots; common fine tubular pores; 30 percent pebbles and 5 percent cobbles; neutral (pH 7.1); clear smooth boundary.

Bt1 = 8 to 17 inches; brown (10YR 5/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine medium and coarse roots; many fine and medium tubular pores; few thin clay films on faces of peds and lining pores; 30 percent pebbles and 10 percent cobbles; neutral (pH 7.1); clear smooth boundary.

Bt2 = 17 to 31 inches; yellowish brown (10YR 5/4) very gravelly clay loam, dark brown (10YR 4/3) moist; moderate fine subangular blocky

structure; slightly hard, friable, sticky and slightly plastic; many fine, medium and coarse and common very fine roots; common fine and medium tubular pores; common thin clay films on faces of peds and lining pores; 40 percent pebbles and 10 percent cobbles; neutral (pH 7.1); clear smooth boundary.

**Bt3** = 31 to 60 inches; lightly yellowish brown (10YR 6/4) very gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common fine and medium roots; few fine tubular pores; common thin clay films on faces of peds and lining pores; 45 percent pebbles and 10 percent cobbles; neutral (pH 7.1).

**Type location:** Churchill County, Nevada; approximately 12 miles northwest of Cold Springs; 400 feet north and 200 feet east of the southwest corner of Section 27, T.20 N., R.36 E.; (39 degrees, 33 minutes, 51 seconds north latitude and 117 degrees, 55 minutes, 26 seconds west longitude.)

#### Range in Characteristics

**Soil moisture:** Moist in winter and spring, dry in summer and fall. Depth of wetting exceeds 30 inches in most years.

**Soil temperature:** 42 to 46 degrees F.

**Mollic epipedon:** 10 to 20 inches thick and includes the Bt1 horizon.

**Reaction:** Slightly acid or neutral.

#### A horizon:

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3.

Rock fragments = 35 to 55 percent, mainly pebbles.

#### Bt1 horizon:

Value = 4 or 5 dry.

Chroma = 2 or 3.

Structure = Subangular blocky or massive.

Consistence = Slightly sticky or sticky and slightly plastic or plastic.

Texture = Very gravelly sandy loam or very gravelly loam.

Clay content = 18 to 25 percent.

Rock fragments = 35 to 50 percent, mainly pebbles.

Other features = In some pedons this horizon is not part of the mollic epipedon and has colors of the Bt2 and Bt3 horizons.

#### Bt2 and Bt3 horizons:

Value = 5 or 6 dry, 3 through 5 moist.

Chroma = 3 or 4.

Structure = Fine subangular blocky or massive.

Consistence = Slightly hard or hard, slightly sticky or sticky, and slightly plastic or plastic.

Texture = Very gravelly loam, very gravelly clay loam, or very gravelly sandy clay loam.

Clay content = 18 to 35 percent.

Rock fragments = 35 to 60 percent, mainly pebbles.

## Ceejay Series

The Ceejay series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Ceejay soils are on hills. Slopes are 4 to 30 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 49 degrees F.

**Taxonomic class:** Clayey, montmorillonitic, mesic Lithic Xerollic Haplargids

**Typical pedon:** Ceejay very stony loam, 4 to 30 percent slopes, in map unit 1050. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles, 10 percent cobbles, and 10 percent stones.

A1 = 0 to 2 inches; brown (10YR 5/3) very stony loam, dark brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common very fine interstitial pores; 15 percent pebbles and 15 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

A2 = 2 to 4 inches; light brownish gray (10YR 6/2) stony loam, dark grayish brown (10YR 4/2) moist; moderate medium platy structure; slightly hard, very friable, sticky and slightly plastic; common very fine and fine roots; common very fine interstitial and few very fine vesicular pores; 10 percent pebbles and 10

percent stones; mildly alkaline (pH 7.4); abrupt smooth boundary.

Bt1 = 4 to 12 inches; yellowish brown (10YR 5/4) gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate fine prismatic structure parting to strong fine and medium angular blocky; extremely hard, firm, very sticky and very plastic; common very fine and few fine roots; common very fine tubular pores; continuous thick clay films on faces of peds and lining pores; 15 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.4); clear smooth boundary.

Bt2 = 12 to 16 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to strong medium and fine angular blocky; hard, friable, sticky and plastic; few very fine and fine roots; many very fine tubular pores; continuous thick clay films on faces of peds and lining pores; 15 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.5); abrupt wavy boundary.

R = 16 inches; hard basalt.

**Type location:** Churchill County, Nevada; about 8.5 miles north of Fernley; approximately 250 feet west and 2,600 feet north of the southeast corner of section 33, T.22 N., R.25 E.; (39 degrees, 43 minutes, 50 seconds north latitude and 119 degrees, 10 minutes, 14 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, dry in the summer and fall, moist in winter and spring.

**Soil temperature:** 54 to 59 degrees F.

**Depth to bedrock:** 14 to 20 inches to a lithic contact.

#### Control section:

Clay content = 35 to 45 percent.

Rock fragments = Averages 15 to 30 percent, mostly pebbles and cobbles.

Reaction = Mildly alkaline or moderately alkaline.

#### A horizons:

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

#### Bt horizons:

Hue = 10YR or 7.5YR.

Value = 4 or 5, moist or dry.

Chroma = 3 or 4, moist or dry.

Texture = Clay loam or clay.

Clay content = 35 to 45 percent.

Rock fragments = Averages 15 to 30 percent, mostly pebbles and cobbles.

Structure = Prismatic parting to platy or angular blocky.

Consistence = Slightly hard or extremely hard, sticky or very sticky and plastic or very plastic.

## Celeton Series

The Celeton series consists of very shallow and shallow, somewhat excessively drained soils that formed in residuum derived from diatomite. Celeton soils are on hills, pediments, and plateaus. Slopes are 2 to 50 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Loamy, mixed (calcareous), mesic, shallow Typic Torriorthents

**Typical pedon:** Celeton very cobbly sandy loam, 8 to 30 percent slopes, in map unit 201. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles and 20 percent cobbles.

A = 0 to 2 inches; light gray (10YR 7/2) very cobbly sandy loam, grayish brown (10YR 5/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 25 percent pebbles and 30 percent cobbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

C = 2 to 7 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine roots; few very fine interstitial pores; 75 percent soft diatomite fragments; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear irregular boundary.

Cr = 7 to 14 inches; white (N 8) weathered diatomite; few very fine roots in vertical fracture planes in upper part.

**Type location:** Churchill County, Nevada; approximately 6 miles south of Lahontan Dam; 4,400 feet south and 560 feet west of the northeast corner of section 34, T.18 N., R.26 E.; (39 degrees, 22 minutes, 33 seconds north latitude and 119 degrees, 02 minutes, 39 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry moist in some part for short periods during winter and early spring months.

*Soil temperature:* 53 to 57 degrees F.

*Depth to bedrock:* 4 to 14 inches to a paralithic contact.

**Control section:**

Clay content = 5 to 15 percent.

Rock fragments = Averages 5 to 25 percent pebbles and cobbles.

Effervescence = Slightly effervescent or strongly effervescent.

Reaction = Mildly alkaline to strongly alkaline.

**A horizon:**

Value = 6 through 8 dry, 4 through 7 moist.

Chroma = 0 through 3.

**C horizon:**

Value = 6 through 8 dry; 5 through 7 moist.

Chroma = 0 through 3.

Texture = Sandy loam or loam.

Rock fragments = 5 to 20 percent

Structure = Massive or subangular blocky.

Consistence = Soft to hard, very friable to firm, nonplastic to plastic.

Other features = 60 to 80 percent soft fragments of diatomite.

## Chill Series

The Chill series consists of very shallow and shallow, well drained soils that formed in residuum derived from granitic rocks. Chill soils are on hills and mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 50 degrees F.

**Taxonomic class:** Loamy, mixed, mesic, shallow Xerollic Haplargids

**Typical pedon:** Chill gravelly sandy loam, 8 to 30 percent slopes, in map unit 100. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 10 percent fine pebbles.

A1-0 to 1 inch; pale brown (10YR 6/3) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; few very fine and fine roots; common very fine and fine interstitial and few very fine tubular pores; 20 percent pebbles; mildly alkaline (pH 7.5); abrupt smooth boundary.

A2 = 1 to 4 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine and medium roots; common very fine and fine interstitial and tubular pores; 10 percent pebbles; mildly alkaline (pH 7.4); clear smooth boundary.

Bt = 4 to 8 inches; pale brown (10YR 6/3) gravelly sandy clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine and few medium and coarse roots; common very fine and fine tubular pores; common moderately thick clay films on faces of peds and lining pores; 20 percent pebbles; neutral (pH 6.6); abrupt smooth boundary.

Cr = 8 inches; weathered granite.

**Type location:** Churchill County, Nevada; approximately 29 miles southeast of Fallon; 1,900 feet north and 1,600 feet west of the projected southeast corner of section 8, T.15 N., R.32 E.; (39 degrees, 11 minutes, 20 seconds north latitude and 118 degrees, 23 minutes, 34 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry, moist in winter and spring, dry June through November.

*Soil temperature:* 50 to 56 degrees F.

*Depth to bedrock:* 6 to 14 inches to a paralithic contact.

**Control section:**

Clay content = 18 to 27 percent.

Sand content = 45 to 65 percent.

Rock fragement = 15 to 35 percent, mainly fine pebbles.

Reaction = Neutral or mildly alkaline.

**A horizon:**

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

**Bt horizon:**

Hue = 10YR or 7.5YR.

Value = 4 through 6 dry, 3 through 5 moist.

Chroma = 3 or 4.

Clay content = 25 to 35 percent.

Consistence = Soft to hard, very friable to firm, slightly sticky or sticky, and slightly plastic or plastic.

## Chilper Series

The Chilper series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Chilper soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Clayey over loamy-skeletal, montmorillonitic, mesic Duric Natrargids

**Typical pedon:** Chilper gravelly very fine sandy loam, 4 to 8 percent slopes, in map unit 770. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 25 percent pebbles.

A1 = 0 to 2 inches; light gray (10YR 7/2) gravelly very fine sandy loam, grayish brown (10YR 5/2) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine and few fine roots; many fine and medium vesicular pores; 20 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2 = 2 to 5 inches; very pale brown (10YR 7/3) very fine sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine tubular pores; slightly effervescent;

moderately alkaline (pH 8.4); clear smooth boundary.

2B<sub>tnk</sub> = 5 to 16 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; strong medium prismatic structure; hard, firm, sticky and plastic; common very fine and fine roots; few very fine tubular pores; 5 percent pebbles; many thin clay films on faces of peds and lining pores; common fine lime filaments; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

2B<sub>tnk</sub> = 16 to 25 inches; light brown (7.5YR 6/4) clay, dark brown (7.5YR 4/4) moist; strong fine prismatic structure; hard, firm, very sticky and very plastic; few very fine and fine roots; few very fine tubular pores; 5 percent pebbles; many thin clay films on faces of peds and lining pores; many fine lime and gypsum seams; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

3B<sub>qk</sub> = 25 to 60 inches; very pale brown (10YR 7/3) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; hard, firm and brittle, slightly sticky and nonplastic; few very fine roots; few very fine tubular pores; 60 percent pebbles and 2 percent cobbles; continuous brittle matrix; violently effervescent; strongly alkaline (pH 8.8).

**Type location:** Pershing County, Nevada; approximately 20 miles southeast of Lovelock near Buena Vista Hill; 1,900 feet east and 1,000 feet north of the southwest corner of section 32, T.25 N., R.35 E.; (39 degrees, 59 minutes, 15 seconds north latitude and 118 degrees, 04 minutes, 18 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in winter and early spring, dry June through October.

**Soil temperature:** 53 to 59 degrees F.

**Depth to continuous brittle matrix and base of natric horizon:** 20 to 35 inches.

**Control section:**

Clay content = 35 to 50 percent in the upper part, and 5 to 10 percent in the contrasting lower part.

Rock fragments=Up to 15 percent in the upper part, and 60 to 80 percent in the lower part, mainly pebbles.

Exchangeable sodium=35 to 60 percent.

Reaction=Moderately alkaline or strongly alkaline.

**A horizon:**

Value=6 or 7 dry, 4 or 5 moist.

Chroma=2 or 3.

Other features=Noneffervescent to strongly effervescent in some pedons.

**2Btn horizons:**

Hue=10YR or 7.5YR.

Value=5 or 6 dry, 4 or 5 moist.

Chroma=3 through 6.

Texture=Clay loam or clay.

Structure=Strong fine or medium prismatic structure.

Sodicity (SAR)=31 to 45.

Other features=Segregated lime throughout with visible secondary gypsum only in the lower subhorizons.

**3Bqk horizon:**

Value=5 through 7 dry, 4 through 6 moist.

Chroma=3 or 4.

Rock fragments=60 to 80 percent.

Cementation=Continuous brittle matrix for a minimum thickness of 6 inches in at least one subhorizon above 40 inches.

## Chuckles Series

The Chuckles series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rocks over lacustrine sediments. Chuckles soils are on lake plains, lake terraces, and lagoons. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Fine-silty, mixed, mesic Typic Camborthids

**Typical pedon:** Chuckles loam, 0 to 2 percent slopes, in map unit 280. (Colors are for dry soil unless otherwise noted.)

A1=0 to 1 inch; light brownish gray (10YR 6/2) loam, grayish brown (10YR 5/2) moist; moderate thin and medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few medium vesicular and tubular pores; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

A2=1 to 3 inches; pale brown (10YR 6/3) fine sandy loam, grayish brown (10YR 5/2) moist; weak medium prismatic structure parting to moderate medium platy; slightly hard, very friable, slightly sticky and nonplastic; few medium and coarse roots; few medium vesicular and tubular pores; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

An=3 to 7 inches; light brownish gray (10YR 6/2) loamy fine sand, dark grayish brown (10YR 4/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common medium and coarse roots; few fine tubular pores; SAR is 15; strongly effervescent; strongly alkaline (pH 8.9); clear smooth boundary.

Bwn=7 to 14 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; very dark grayish brown (10YR 3/2) and brown (7.5YR 5/4) stains on faces of peds; weak medium prismatic structure parting to strong medium angular blocky; slightly hard, firm, slightly sticky and nonplastic; common medium roots along faces of peds; many fine and few medium and coarse tubular pores; SAR is 45; strongly effervescent; strongly alkaline (pH 9.0); gradual wavy boundary.

Bkn1=14 to 35 inches; brown (10YR 5/3) silt loam, dark brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, firm, sticky and slightly plastic; few fine and medium roots; many fine and few medium and coarse tubular pores; few fine lime filaments and threads; SAR is 46; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

Bkn2=35 to 39 inches; light brownish gray (10YR 6/2) silt loam with strata of very fine sandy loam, grayish brown (10YR 5/2) moist; massive; slightly hard, friable, slightly sticky and nonplastic; few fine and medium tubular pores; few fine lime filaments and threads; SAR is 46; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

2BCK = 39 to 60 inches; light gray (10YR 7/2) very fine sandy loam, grayish brown (10YR 5/2) moist; massive; hard, friable, nonsticky and nonplastic; few fine and medium tubular pores; few fine lime filaments and threads; violently effervescent; strongly alkaline (pH 8.9); clear wavy boundary.

**Type location:** Churchill County, Nevada; approximately 44 miles northeast of Fallon; 1,200 feet south and 1,600 feet east of the northwest corner of section 1, T.23 N., R.33 E.; (39 degrees, 53 minutes, 45 seconds north latitude and 118 degrees, 13 minutes, 27 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist for short periods in the winter and spring.

*Soil temperature:* 54 to 59 degrees F.

*Depth to base of cambic horizon:* 11 to 20 inches.

*Control section:*

Clay content = 18 to 27 percent.

#### A horizon:

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

#### An horizon:

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture = Silt loam, loam or loamy fine sand.

Structure = Granular or subangular blocky.

Consistence = Nonsticky or slightly sticky.

Reaction = Moderately alkaline or strongly alkaline.

Sodicity (SAR) = 13 to 30.

#### Bwn horizon:

Value = 5 through 7 dry, 3 through 5 moist.

Chroma = 3 moist, 2 or 3 dry.

Structure = Weak or moderate, fine or medium prismatic.

Consistence = Slightly hard or hard, friable or firm.

Reaction = Strongly alkaline or very strongly alkaline.

Sodicity (SAR) = 45 to 90.

#### Bkn horizons:

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 3 through 5 moist.

Chroma = 2 or 3.

Structure = Medium or coarse, angular blocky, platy or massive.

Consistence = Friable or firm, slightly sticky or sticky.

Texture = Loam or silt loam with thin strata of silty clay loam or very fine sandy loam.

Sodicity (SAR) = 45 to 90.

#### 2BCK horizon:

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture = Loam, very fine sandy loam or silt loam with thin strata of silty clay loam or very fine sandy loam. May be silty clay below 40 inches in some pedons.

Reaction = Moderately alkaline to very strongly alkaline.

## Clan Alpine Series

The Clan Alpine series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Clan Alpine soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 42 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed, frigid Typic Argixerolls

**Typical pedon:** Clan Alpine very gravelly loam, 30 to 50 percent slopes, in map unit 370. (Colors are for dry soil unless otherwise noted.)

O = 1 inch to 0; undecomposed pine needles and plant litter.

A1 = 0 to 3 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine roots; common very fine and fine tubular and interstitial pores; 25 percent pebbles, 10 percent cobbles, and 3 percent stones; neutral (pH 7.2); clear smooth boundary.

A2 = 3 to 10 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure = soft, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common very fine, fine and medium tubular pores; 25 percent pebbles, 10 percent cobbles, and 3 percent stones; neutral (pH 7.2); clear smooth boundary.

Bt1 = 10 to 14 inches; pale brown (10YR 6/3) very cobbly loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine and medium roots; common very fine, fine and medium tubular pores; common thin clay films lining pores, on faces of peds, and coating rock fragments; 20 percent pebbles and 20 percent cobbles; neutral (pH 7.3); clear smooth boundary.

Bt2 = 14 to 20 inches; pale brown (10YR 6/3) very cobbly loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine and medium roots; few fine tubular pores; common thin clay films lining pores, on faces of peds, and coating rock fragments; 20 percent pebbles and 30 percent cobbles; neutral (pH 7.3); clear smooth boundary.

Bt3 = 20 to 39 inches; pale brown (10YR 6/3) very cobbly loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; few medium roots; few fine tubular pores; common thin clay films lining pores, on faces of peds, and coating rock fragments; 20 percent pebbles and 20 percent cobbles; neutral (pH 7.3); clear irregular boundary.

Cr = 39 inches; weathered and highly fractured rhyolitic tuff with illuvial clay coating fractures and roots in pockets.

**Type location:** Churchill County, Nevada; approximately 1,750 feet east and 200 feet south of the projected northwest corner of section 17, T.18 N., R.38 E.; (39 degrees, 25 minutes, 55 seconds north latitude and 117 degrees, 43 minutes, 58 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Seasonally moist; moist from late fall through early summer, dry mid-summer through mid-fall; xeric soil moisture regime bordering on aridic.

*Soil temperature:* 43 to 45 degrees F.

*Mollic epipedon thickness:* 8 to 14 inches, includes the Bt1 horizon in some pedons.

*Solum thickness:* 20 to 40 inches.

*Depth to argillic horizon:* 5 to 15 inches.

*Depth to bedrock:* 20 to 40 inches to a paralithic contact.

*Other features:* Some pedons have BC horizons overlying the paralithic contact.

*Control section:*

Clay content = 25 to 35 percent.

Rock fragments = 35 to 60 percent, mainly pebbles and cobbles.

### Cleavage Series

The Cleavage series consists of shallow, well drained soils that formed in residuum derived from volcanic rocks. Cleavage soils are on mountains. Slopes of 4 to 75 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 43 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed, frigid Lithic Argixerolls

**Typical pedon:** Cleavage very gravelly loam, 30 to 75 percent slopes, in map unit 840. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles and 20 percent cobbles.

A = 0 to 7 inch; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine and fine tubular pores; 40 percent pebbles and 10 percent cobbles; neutral (pH 7.2); clear smooth boundary.

Bt = 7 to 14 inches; pale brown (10YR 6/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular



blocky structure; hard, friable, sticky and plastic; common very fine and fine roots; common very fine and fine tubular pores; common thin and few moderately thick clay films on faces of peds; 50 percent pebbles and 5 percent cobbles; neutral (pH 6.8); abrupt irregular boundary.

R = 14 inches; hard rhyolitic tuff bedrock.

**Type location:** Churchill County, Nevada; approximately 22 miles north of Frenchman; 1/4 mile north of Job Peak, Stillwater Mountains; 850 feet east and 1,400 feet south of the northwest corner of section 24, T.20 N., R.33 E.; (39 degrees, 35 minutes, 12 seconds north latitude and 118 degrees, 14 minutes, 04 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Moist in winter and spring, dry from July through October for 70 to 120 consecutive days.

**Soil temperature:** 44 to 47 degrees F.

**Mollic epipedon thickness:** 7 to 10 inches, does not include Bt horizon.

**Depth to bedrock:** 14 to 20 inches to a lithic contact.

#### Control section:

Clay content = 20 to 35 percent.

Rock fragments = 50 to 80 percent, mostly pebbles or cobbles.

Reaction = Neutral or mildly alkaline.

#### A horizon:

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3.

#### Bt horizon:

Hue = 7.5YR or 10YR.

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 through 4.

Texture = Very cobbly, extremely cobbly, very gravelly or extremely gravelly clay loam, very gravelly sandy clay loam, some pedons have very cobbly or very gravelly loam.

Structure = Subangular blocky or angular blocky or it is massive.

Consistence = Very friable to firm, moist, slightly hard to hard dry, slightly sticky or sticky and slightly plastic or plastic wet.

## Cleaver Series

The Cleaver series consists of shallow over duripan, well drained soils that formed in alluvium derived from volcanic rocks. Cleaver soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 51 degrees F.

**Taxonomic class:** Loamy, mixed, mesic, shallow Typic Durargids

**Typical pedon:** Cleaver gravelly loam, 2 to 4 percent slopes, in map unit 530. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 2 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, slightly sticky and nonplastic; few very fine roots; common fine and medium vesicular pores; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A2 = 2 to 4 inches; very pale brown (10YR 7/3) gravelly loam, brown (10YR 5/3) moist; moderate medium platy structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common fine vesicular pores; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bt1 = 4 to 8 inches; light yellowish brown (10YR 6/4) gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; few thin clay films lining pores; 15 percent pebbles; moderately alkaline (pH 8.4); clear smooth boundary.

Bt2 = 8 to 12 inches; light yellowish brown (10YR 6/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure; slightly hard, friable, sticky and plastic; many very fine and fine roots; common fine tubular pores; common moderately thick clay films on faces of peds, lining pores and coating rock fragments; 20 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.4);

clear smooth boundary.

Bqkm = 12 to 43 inches; white (10YR 8/2) indurated duripan, light brownish gray (10YR 6/2) moist; massive; extremely hard, extremely firm; 40 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 9.0).

**Type location:** Churchill County, Nevada; approximately 41 miles north of Cold Springs; 2,000 feet south and 400 feet east of the northwest corner of section 31, T.25 N., R.39 E.; (39 degrees, 59 minutes, 36 seconds north latitude and 117 degrees, 38 minutes, 38 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist winter and early spring, dry from late April through early December.

**Soil temperature:** 54 to 57 degrees F.

**Depth to indurated duripan:** 10 to 20 inches.

#### A horizon:

Carbonates = The upper few inches are commonly calcareous due to recharge from dust.

Reaction = Moderately alkaline or strongly alkaline.

Chroma = 1 through 3.

Rock fragments = 0 to 50 percent, mostly pebbles.

Other features = Some pedons commonly have a varnished desert pavement.

#### Bt horizons:

Hue = 7.5YR or 10YR.

Value = 5 or 6 dry, 3 through 5 moist.

Chroma = 3 through 5.

Texture = Gravelly loam, gravelly clay loam with subhorizons of gravelly clay common in some pedons.

Structure = Weak or moderate; subangular blocky, prismatic or massive.

Clay content = 25 to 35 percent.

Rock fragments = 15 to 35 percent.

Reaction = Neutral to moderately alkaline.

Other features = In some pedons transitional Bt horizons with sandy loam, fine sandy loam, loam or clay loam containing few or no pebbles are common in the upper part of the

argillic horizon and from 15 to 40 percent pebbles and cobbles in the lower part.

## Colbar Series

The Colbar series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Colbar soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 49 degrees F.

**Taxonomic class:** Fine-loamy, mixed, mesic Xerollic Haplargids

**Typical pedon:** Colbar cobbly loam, 30 to 50 percent slopes, in map unit 300. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 3 inches; brown (10YR 5/3) cobbly loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; few very fine interstitial and tubular pores; 5 percent pebbles, 25 percent cobbles and 1 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

A2 = 3 to 6 inches; pale brown (10YR 6/3) cobbly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few very fine and fine tubular pores; 5 percent pebbles and 20 percent cobbles; mildly alkaline (pH 7.4); clear smooth boundary.

A = 6 to 9 inches; pale brown (10YR 6/3) cobbly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; 5 percent pebbles and 15 percent cobbles; mildly alkaline (pH 7.4); clear smooth boundary.

Bt1 = 9 to 12 inches; yellowish brown (10YR 5/4) cobbly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; soft, very friable, sticky and plastic; common very fine and fine roots; common very fine tubular pores; few thin clay films on faces of peds, lining pores and coating rock fragments; 5 percent pebbles and 15 percent

cobbles; moderately alkaline (pH 8.4); clear wavy boundary.

Bt2 = 12 to 16 inches; pale brown (10YR 6/3) cobbly loam, brown (10YR 4/3) moist; strong fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; common fine tubular pores; few thin clay films lining pores and coating rock fragments; 15 percent pebbles and 15 percent cobbles; moderately alkaline (pH 8.4); clear smooth boundary.

C = 16 to 21 inches; pale brown (10YR 6/3) gravelly loam; brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; 10 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.4); abrupt irregular boundary.

R = 21 inches; hard fractured rhyolite with pockets of loam and few fine roots.

**Type location:** Churchill County, Nevada; 2,500 feet north and 1,200 feet west of the southeast corner of section 19, T.18 N., R.37 E.; (39 degrees, 24 minutes, 38 seconds north latitude and 117 degrees, 51 minutes, 15 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Dry during summer and autumn, moist in late winter and spring.

*Soil temperature:* 48 to 52 degrees F.

*Depth to bedrock:* 20 to 40 inches to a lithic contact.

*Thickness of A and Bt horizons:* 11 to 24 inches.

#### Control section:

Clay content = 25 to 35 percent.

Rock fragments = 15 to 35 percent, mainly pebbles and cobbles.

Other features = Some pedons have Bk horizons with thin lime coats on undersides of rock fragments below the Bt horizon.

#### A horizons:

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

Reaction = Mildly alkaline or moderately alkaline.

#### Bt horizons:

Value = 5 or 6 dry, 3 through 5 moist.

Chroma = 3 or 4.

Structure = Weak to strong, very fine to medium subangular blocky.

Consistence = Soft to hard, very friable to friable.

Texture = Cobbly loam, cobbly clay loam or gravelly clay loam.

Reaction = Mildly alkaline or moderately alkaline.

#### C horizon:

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Gravelly loam or cobbly loam.

## Coppereid Series

The Coppereid series consists of very shallow, well drained soils that formed in residuum derived from sedimentary rocks. Coppereid soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 49 degrees F.

**Taxonomic class:** Loamy, mixed (calcareous), mesic, shallow Xeric Torriorthents

**Typical pedon:** Coppereid gravelly loam, 30 to 75 percent slopes, in map unit 880. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 35 percent pebbles and 2 percent cobbles.

A1 = 0 to 2 inches; light brownish gray (2.5Y 6/2) gravelly loam, dark grayish brown (2.5Y 4/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and common fine roots; common very fine interstitial and few very fine tubular pores; 30 percent hard pebbles; 20 percent soft fragments; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2 = 2 to 9 inches; light brownish gray (2.5Y 6/2) gravelly loam, dark grayish brown (2.5Y 4/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common very fine tubular pores; 15 percent hard pebbles; 30 percent soft fragments; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Cr = 9 inches; highly weathered shale.

**Type location:** Churchill County, Nevada; approximately 2,200 feet south and 1,200 feet east of the northwest corner of section 34, T.22 N., R.33 E.; (39 degrees, 43 minutes, 58 seconds north latitude and 118 degrees, 15 minutes, 47 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, dry in summer and fall, moist in winter and early spring.

*Soil temperature:* 53 to 57 degrees F.

*Depth to bedrock:* 5 to 10 inches to a paralithic contact.

#### Control section:

Carbonates = Calcareous throughout; 5 to 15 percent calcium carbonate by weight of the less than 20 millimeter fraction.

Clay content = 10 to 18 percent.

Rock fragments = 15 to 35 percent hard pebbles with 15 to 30 percent soft platy pebbles.

Reaction = Moderately alkaline or strongly alkaline.

#### A horizons:

Hue = 2.5Y or 10YR.

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

## Corral Series

The Corral series consists of shallow, well drained soils formed in residuum and colluvium derived from tuffaceous rocks. Corral soils are on hills. Slopes are 15 to 50 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 47 degrees F.

**Taxonomic class:** Loamy, mixed, mesic, shallow Xerollic Haplargids

**Typical pedon:** Corral stony loam, 15 to 50 percent slopes, in map unit 830. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 2 percent stones.

A = 0 to 3 inches; pale brown (10YR 6/3) stony, loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; few very fine roots; common very fine tubular and few very

fine interstitial pores; 10 percent pebbles and 2 percent stones; neutral (pH 7.2); clear smooth boundary.

Bt1 = 3 to 5 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; common thin and moderately thick clay films on faces of peds and lining pores; 5 percent pebbles; mildly alkaline (pH 7.4); clear smooth boundary.

Bt2 = 5 to 14 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; common thin clay films on faces of peds and lining pores; 5 percent pebbles; mildly alkaline (pH 7.4); clear smooth boundary.

Cr = 14 inches; soft tuff, with some lime in fractures.

**Type location:** Churchill County, Nevada; approximately 12 miles north of Frenchman; approximately 900 feet east and 2,500 feet north of the projected southwest corner of section 12, T.18 N., R.32 E.; (39 degrees, 26 minutes, 14 seconds north latitude and 118 degrees, 20 minutes, 48 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually moist from early December through May, dry mid June through mid November.

*Soil temperature:* 47 to 53 degrees F.

*Depth to paralithic contact:* 12 to 20 inches.

#### Control section:

Clay content = 20 to 35 percent clay.

Sand content = 30 to 50 percent sand.

Silt content = 15 to 30 percent silt.

Carbonates = Some pedons have segregated and disseminated lime in the upper part of the bedrock and along fractures.

#### A horizon:

Value = 5 or 6 dry; 3 or 4 moist.

Chroma = 2 or 3.

Reaction = Neutral or mildly alkaline.

**Bt horizons:**

Hue = 7.5YR, 10YR.

Value = 4 through 6 dry; 3 or 4 moist.

Chroma = 3 or 4.

Texture = Loam, sandy clay loam, or clay loam.

Rock fragments = Mostly gravel, ranges from 0 to 15 percent.

Structure = Prismatic parting to angular blocky or is subangular blocky.

Reaction = Neutral or mildly alkaline.

## Defler Series

The Defler series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Defler soils are on inset fans and longshore bars. Slopes are 2 to 4 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 47 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed (calcareous), mesic Typic Torriorthents

**Typical pedon:** Defler gravelly fine sandy loam, 2 to 4 percent slopes, in map unit 391. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 4 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine and fine interstitial pores; 25 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.3); clear smooth boundary.

A2 = 4 to 7 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine and fine tubular pores; 25 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1 = 7 to 19 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and

nonplastic; many very fine and fine roots; common very fine and fine tubular pores; few thin lime seams; 45 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bk2 = 19 to 44 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; common fine interstitial and few fine tubular pores; few thin lime seams; 50 percent pebbles; strongly effervescent; strongly alkaline (pH 8.7); gradual smooth boundary.

2C = 44 to 60 inches; pale brown (10YR 6/3) stratified extremely gravelly sandy loam and coarse sand, brown (10YR 4/3) moist; single grain, loose, nonsticky and nonplastic; common fine interstitial pores; 60 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 11 miles northeast of Cold Springs; 1,600 feet south and 1,000 feet west of the northeast corner of section 16, T.19 N., R.38 E.; (39 degrees, 30 minutes, 54 seconds north latitude and 117 degrees, 42 minutes, 17 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Moist in some part during November through May; dry from June through October.

**Soil temperature:** 47 to 52 degrees F.

**Depth to 2C horizon:** 35 to 45 inches.

**Control section:**

Clay content = 8 to 18 percent.

Rock fragments = Averages 35 to 60 percent, mainly pebbles.

Reaction = Mildly alkaline to strongly alkaline.

### A horizons:

Value = 5 through 7 dry, 3 through 5 moist.

Chroma = 2 through 4.

### Bk horizons:

Value = 6 or 7 dry, 3 through 5 moist.

Chroma = 2 through 4.

Texture = Very gravelly fine sandy loam, very gravelly loam, or very gravelly sandy loam when averaged.

Structure = Subangular blocky or massive or single grain.

Consistence = Slightly hard, soft or loose, very friable or firm, nonsticky or slightly sticky, nonplastic or slightly plastic.

Carbonates = Secondary carbonates as filaments or coatings on rock fragments.

Effervescence = Strongly effervescent to violently effervescent.

Cementation = Any strata below 12 inches, may contain 5 to 15 percent weakly silica cemented durinodes.

## 2C horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Stratified very gravelly sandy loam to extremely gravelly coarse sand.

Rock fragments = 50 to 70 percent, mainly pebbles.

Consistence = Loose or soft, loose or very friable.

## Desatoya Series

The Desatoya series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Desatoya soils are on fan remnants. Slopes are 4 to 15 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 47 degrees F.

**Taxonomic class:** Clayey over loamy-skeletal, montmorillonitic, mesic Durixerollic Haplargids

**Typical pedon:** Desatoya very gravelly loam, 4 to 8 percent slopes, in map unit 321. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles.

A1 = 0 to 3 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular and vesicular pores; 40 percent pebbles; neutral (pH 7.3); clear smooth boundary.

A2 = 3 to 6 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very

friable, slightly sticky and slightly plastic; common very fine, fine, medium and coarse roots; common very fine and fine vesicular pores; 35 percent pebbles and 10 percent cobbles; mildly alkaline (pH 7.4); clear smooth boundary.

Bt = 6 to 13 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; strong fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine, medium and coarse roots; common fine and medium tubular pores; common moderately thick clay films on faces of peds, lining pores and coating rock fragments; 25 percent pebbles; slightly effervescent; mildly alkaline (pH 7.6); clear smooth boundary.

Btk = 13 to 15 inches; pale brown (10YR 6/3) gravelly clay loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; few fine tubular pores; common moderately thick clay films on faces of peds, lining pores and coating rock fragments; 30 percent pebbles; few fine lime filaments; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

2Bqk = 15 to 60 inches; light gray (10YR 7/2) extremely gravelly sandy loam, brown (10YR 4/3) moist; massive; hard, firm and brittle, nonsticky and nonplastic; pockets of common fine roots; 45 percent pebbles and 20 percent cobbles; few fine lime filaments; continuous brittle matrix; violently effervescent; strongly alkaline (pH 9.0).

**Type location:** Churchill County, Nevada; approximately 7 miles northeast of Cold Springs; 1,500 feet south and 200 feet east of the projected northwest corner of Section 5, T.18 N., R.38 E.; (39 degrees, 27 minutes, 25 seconds north latitude and 117 degrees, 44 minutes, 16 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry in early June through October, moist in winter and spring.

**Soil temperature:** 48 to 52 degrees F.

**Depth to weak cementation:** 14 to 20 inches.

**Depth to carbonates:** 10 to 20 inches.

**A horizons:**

Value = 5 or 6 dry, 3 through 5 moist.

Chroma = 2 or 3.

Reaction = Neutral or mildly alkaline.

**Bt horizon:**

Value = 5 or 6 dry, 3 through 5 moist.

Chroma = 3 or 4 moist.

Texture = Gravelly clay loam or gravelly clay.

Clay content = 35 to 45 percent.

Rock fragments = 20 to 30 percent, mainly pebbles.

Structure = Moderate or strong fine or medium subangular blocky.

Reaction = Mildly alkaline or moderately alkaline.

**2Bqk horizon:**

Texture = Stratified extremely gravelly sandy loam to very gravelly loamy sand and averages very gravelly or extremely gravelly sandy loam.

Clay content = 8 to 18 percent.

Rock fragments = 40 to 80 percent, mainly pebbles.

Consistence = Hard or very hard dry, firm to slightly brittle moist.

Reaction = Moderately to very strongly alkaline.

Cementation = Continuous weakly silica-cemented, with subhorizons below a depth of 38 inches that are discontinuously weak or strongly silica-cemented.

A1 = 0 to 2 inches; pale brown (10YR 6/3)

extremely gravelly very fine sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and slightly plastic; few very fine roots; common fine vesicular pores; 70 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A2 = 2 to 5 inches; pale brown (10YR 6/3) gravelly very fine sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and slightly plastic; few very fine roots; many fine tubular pores; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

E = 5 to 7 inches; light gray (10YR 7/2) silt loam high in volcanic ash; pale brown (10YR 6/3) moist; strong thin platy structure; slightly hard, very friable, slightly sticky and plastic; common very fine and fine roots; many very fine and few fine tubular pores; 5 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

Bt<sub>nk1</sub> = 7 to 10 inches; pale brown (10YR 6/3) clay; dark brown (7.5YR 4/4) moist; moderate fine prismatic structure; hard, friable, very sticky and very plastic; many very fine and common fine roots; many very fine and common fine tubular pores; 5 percent pebbles; many thin clay films on faces of peds and lining pores; few fine lime filaments and soft masses; thin lime coats on undersides of pebbles; slightly effervescent; strongly alkaline (pH 8.8); gradual smooth boundary.

Bt<sub>nk2</sub> = 10 to 17 inches; pinkish gray (7.5YR 6/2) gravelly clay loam, brown (7.5YR 5/4) moist; moderate fine prismatic structure; hard, firm, very sticky and very plastic; many very fine and common fine roots; many very fine tubular pores; 15 percent pebbles; many thin clay films on faces of peds and lining pores; many fine lime seams and thin lime coats on undersides of pebbles; strongly effervescent; very strongly alkaline (pH 8.8); clear smooth boundary.

3Bqk = 17 to 26 inches; very pale brown (10YR 7/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; few very fine tubular pores; 35 percent pebbles and 5 percent cobbles; 30 percent moderately cemented durinodes and 30 percent weak discontinuous

**Dorper Series**

The Dorper series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Dorper soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees F.

**Taxonomic class:** Fine, montmorillonitic, mesic Duric Natrargids

**Typical pedon:** Dorper extremely gravelly very fine sandy loam, 2 to 8 percent slopes, in Pershing County. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 70 percent pebbles and 5 percent cobbles.

silica cementation; lime coats on entire pebble surface; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

4Ck = 26 to 60 inches; light gray (10YR 7/2) extremely gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 65 percent pebbles and 5 percent cobbles; lime coats on undersides of pebbles; violently effervescent; moderately alkaline (pH 8.0).

**Type location:** Pershing County, Nevada; approximately 16 miles west of Imlay, in an unsectionized area, about 3,500 feet east and 1,600 feet north of the southeast corner of section 25, T.33 N., R.32 E.; (41 degrees, 29 minutes, 58 seconds north latitude and 118 degrees, 24 minutes, 52 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist for short periods in winter and early spring, dry late May through November.

*Soil temperature:* 53 to 57 degrees F.

*Depth to the base of the natric horizon:* 10 to 20 inches.

*Depth to the Bqk horizon:* 10 to 20 inches.

*Depth to segregated lime:* 4 to 18 inches.

Reaction = moderately alkaline or strongly alkaline.

#### A horizons:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Consistence = Soft or slightly hard dry, very friable or friable moist.

Effervescence = Varies from noneffervescent to violently effervescent, this is a result of eolian surface recharge of lime.

#### Btk horizons:

Hue = 7.5YR or 10YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 through 6.

Texture = Clay or gravelly clay loam.

Clay content = 35 to 45 percent.

Rock fragments = 5 to 25 percent, mainly pebbles.

Structure = Prismatic, although some pedons are massive when moist.

Sodicity (SAR) = 13 to 40.

Carbonates = The upper Btk subhorizon matrix is noneffervescent to slightly effervescent, with none to few lime filaments or soft masses of lime. The lower Btk subhorizon matrix is slightly effervescent or strongly effervescent and has common or many lime filaments or soft masses.

Gypsum = Some pedons have few fine filaments in the lower Btk subhorizon.

#### Bqk horizon:

Value = 5 through 7 dry, 3 through 5 moist.

Chroma = 2 through 4.

Texture = Extremely gravelly sandy loam or very gravelly coarse sandy loam.

Clay content = 8 to 15 percent.

Rock fragments = 40 to 75 percent, mainly pebbles.

Cementation = 20 to 40 percent weak through strongly cemented durinodes in a friable matrix or has weak or strong discontinuous silica cementation with common thin discontinuous silica laminae; continuous weakly silica cemented strata are common below a depth of 40 inches in some pedons.

Other features = In some pedons, loamy coarse sand is common at some depth below 40 inches.

## Douhide Series

The Douhide series consists of shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. Douhide soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 44 degrees F.

**Taxonomic class:** Clayey-skeletal, montmorillonitic, frigid Lithic Argixerolls

**Typical pedon:** Douhide very stony loam, 30 to 50 percent slopes, in map unit 540. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles, 5 percent cobbles, and 15 percent stones.



A1 = 0 to 2 inches; grayish brown (10YR 5/2) very stony loam, dark brown (10YR 3/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine vesicular and tubular pores; 40 percent pebbles, 5 percent cobbles, and 15 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

A2 = 2 to 7 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and medium roots; common fine tubular pores; 30 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.4); clear smooth boundary.

Bt1 = 7 to 9 inches; yellowish brown (10YR 5/4) very cobbly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and medium roots; common fine tubular pores; common thin clay films on faces of peds and lining pores; 20 percent pebbles and 25 percent cobbles; neutral (pH 7.2); clear smooth boundary.

Bt2 = 9 to 15 inches; yellowish brown (10YR 5/4) very cobbly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine roots; common fine tubular pores; common moderately thick clay films on faces of peds and lining pores; 20 percent pebbles and 30 percent cobbles; mildly alkaline (pH 7.4); abrupt wavy boundary.

R = 15 inches; hard rhyolite with roots in fractures.

**Type location:** Churchill County, Nevada; approximately 8.5 miles east of Eastgate; 1,800 feet north and 1,000 feet east of the southwest corner of section 8, T.16 N., R.38 E.; (39 degrees, 15 minutes, 48 seconds north latitude and 117 degrees, 43 minutes, 57 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry; moist in winter and spring, dry in summer and fall.

*Soil temperature:* 44 to 46 degrees F.

*Depth to bedrock:* 14 to 20 inches to a lithic contact.

Reaction = Neutral or mildly alkaline.

#### A horizons:

Hue = 10YR or 7.5YR.

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3.

#### Bt horizons:

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 3 or 4.

Texture = Clay loam or clay.

Clay content = 35 to 50 percent.

Rock fragments = 35 to 50 percent, mostly cobbles.

## Downeyville Series

The Downeyville series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from rocks. Downeyville soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Lithic Haplargids

**Typical pedon:** Downeyville very gravelly sandy loam, 8 to 30 percent slopes, in map unit 1011. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 45 percent pebbles and 5 percent cobbles.

A = 0 to 3 inches; light gray (10YR 7/2) very gravelly sandy loam, grayish brown (10YR 5/2) moist; strong thick platy structure parting to moderate medium platy; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; many fine and medium and few coarse vesicular and few fine tubular pores; 45 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Btk1 = 3 to 6 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; common fine and medium and few very fine roots; common very fine, fine and

medium tubular pores; 45 percent pebbles and 5 percent cobbles; many thin clay bridges between sand grains; strongly effervescent; few lime pendants on rock fragments; moderately alkaline (pH 8.4); clear smooth boundary.

Btk2 = 6 to 9 inches; pale brown (10YR 6/3) very gravelly loam, yellowish brown (10YR 5/4) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine, fine and medium tubular pores; 45 percent pebbles and 5 percent cobbles; many thin clay bridges between sand grains; few lime pendants on pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

R = 9 inches; hard, fractured basalt.

**Type location:** Churchill County, Nevada; approximately 15 miles south of Middlegate; 2,300 feet south and 1,150 feet west of the northeast corner of Section 17, T.14 N., R.35 E.; (39 degrees, 04 minutes, 40 seconds north latitude and 118 degrees, 03 minutes, 29 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist in some part for short periods during winter and early spring months and for 10 to 20 days cumulative between July and October due to convection storms.

**Soil temperature:** 53 to 57 degrees F.

**Depth to bedrock:** 4 to 14 inches to a lithic contact.

**Effervescence:** Noneffervescent to strongly effervescent.

#### Control section:

Clay content = 14 to 25 percent.

Rock fragments = 35 to 60 percent.

Reaction = Moderately alkaline or strongly alkaline.

#### A horizon:

Hue = 7.5YR or 10YR.

Value = 6 or 7 dry, 3 through 5 moist.

Chroma = 2 or 3.

#### Bt and Btk horizons:

Value = 5 through 7 dry, 3 through 5 moist.

Chroma = 2 though 4.

Texture of fine earth = Loam or fine sandy loam; some pedons may have subhorizons of silt loam.

Clay content = 18 to 27 percent.

Rock fragments = Averages 5 to 20 percent cobbles and stones and 30 to 50 percent pebbles.

Structure = Platy or subangular blocky.

Consistence = Soft to hard dry, very friable or friable moist, slightly sticky or sticky and nonplastic or slightly plastic wet.

Secondary carbonates = Lime in the form of pendants on the undersides of pebbles ranges from few to many.

Effervescence = Slightly effervescent to violently effervescent in lower part.

Other features = The upper part of the Bt horizon may not contain visible lime accumulation or may not be effervescent in some pedons.

## Duco Series

The Duco series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Duco soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 48 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Lithic Argixerolls

**Typical pedon:** Duco stony loam, 15 to 30 percent slopes, in map unit 370. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 15 percent pebbles, 5 percent cobbles, and 2 percent stones.

A1 = 0 to 1 inch; grayish brown (10YR 5/2) stony loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine vesicular and tubular pores; 15 percent pebbles, 5 percent cobbles, and 3 percent stones; mildly alkaline (pH 7.5); clear smooth boundary.

A2 = 1 to 4 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak

medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and medium roots; common fine tubular and interstitial pores; 15 percent pebbles, 5 percent cobbles, and 3 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

**Bt1** = 4 to 7 inches; grayish brown (10YR 5/2) very cobbly clay loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine, medium and coarse roots; common fine and medium tubular pores; 25 percent pebbles and 15 percent cobbles; few thin clay films bridging sand grains; neutral (pH 7.2); abrupt smooth boundary.

**Bt2** = 7 to 11 inches; dark brown (10YR 4/3) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common fine and medium roots; common fine tubular pores; common moderately thick clay films on faces of peds, lining pores, and coating rock fragments; 40 percent pebbles and 15 percent cobbles; neutral (pH 7.0); clear wavy boundary.

**R** = 11 inches; hard rhyolite.

**Type location:** Churchill County, Nevada; approximately 6.5 miles northeast of Cold Springs; 1,200 feet east and 400 feet north of the projected southwest corner of section 5, T.18 N., R.38 E.; (39 degrees, 26 minutes, 54 seconds north latitude and 117 degrees, 44 minutes, 02 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually moist, dry in summer and late fall.

**Soil temperature:** 47 to 53 degrees F.

**Mollic epipedon:** 7 to 20 inches thick, commonly includes the upper part of argillic horizon.

**Combined thickness of A and Bt horizons:** 10 to 20 inches.

**Depth to bedrock:** 10 to 20 inches to a lithic contact.

#### Control section:

Clay content = 27 to 35 clay.

Rock fragments = 35 to 75 percent (30 to 45 percent pebbles, 0 to 20 percent cobbles,

and 0 to 40 percent stones). Stones are usually in lower part.

Reaction = Slightly acid to mildly alkaline.

#### A horizons:

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 1 through 3.

#### Bt1 horizon:

Hue = 10YR or 7.5YR.

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3.

Texture = Gravelly or very gravelly loam, sandy clay loam, or clay loam.

Structure = Subangular blocky or angular blocky.

Consistence = Slightly hard or hard, slightly sticky or sticky, slightly plastic or plastic.

#### Bt2 horizon:

Hue = 10YR or 7.5YR.

Value = 4 through 6 dry, 2 through 4 moist.

Chroma = 2 through 4.

Structure = Moderate or strong, fine or medium, subangular or angular blocky.

## Dun Glen Series

The Dun Glen series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Dun Glen soils are on fan skirts and lake terraces. Slopes are 0 to 4 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 49 degrees F.

**Taxonomic class:** Coarse-loamy, mixed, mesic Typic Camborthids

**Typical pedon:** Dun Glen loam, 2 to 4 percent slopes, in map unit 470. (Colors are for dry soil unless otherwise noted.)

**A1** = 0 to 1 inch; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak medium and thin platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine interstitial pores; 5 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

**A2** = 1 to 5 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate medium

subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; few fine tubular pores; 5 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bw=5 to 12 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; 5 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1=12 to 18 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; few fine roots; common fine tubular pores; 5 percent pebbles; strongly effervescent; lime is disseminated throughout; strongly alkaline (pH 9.0); clear smooth boundary.

Bk2=18 to 29 inches; very pale brown (10YR 7/3) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and nonplastic; few fine roots; few fine tubular pores; 5 percent pebbles; strongly effervescent; few fine lime seams; strongly alkaline (pH 9.0); clear smooth boundary.

Bk3=29 to 60 inches; very pale brown (10YR 7/3) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; 10 percent pebbles; slightly effervescent; few fine lime seams; strongly alkaline (pH 9.0); clear smooth boundary.

**Type location:** Churchill County, Nevada; approximately 24 miles northeast of Cold Springs; 100 feet north and 2,100 feet west of the southeast corner of section 5, T.21 N., R.39 E.; (39 degrees, 42 minutes, 33 seconds north latitude and 117 degrees, 36 minutes, 52 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist in the winter and spring, dry from late May through November.

**Soil temperature:** 47 to 53 degrees F.

#### Control section:

Clay content=9 to 14 percent.

Rock fragments=Up to 10 percent, when mixed.

Other features=Up to 15 percent hard and firm durinodes are present in some pedons.

#### A horizon:

Hue=2.5Y or 10YR.

Value=6 or 7 dry, 4 or 5 moist.

Chroma=2 or 3.

Reaction=Mildly alkaline or moderately alkaline.

#### Bw horizon:

Hue=2.5Y or 10YR.

Value=6 or 7 dry, 4 or 5 moist.

Chroma=2 or 3.

Texture=Very fine sandy loam or silt loam.

Rock fragments=Up to 10 percent, mainly pebbles.

Structure=Angular or subangular blocky structure.

Consistence=Very friable or friable, moist, nonsticky to slightly sticky and nonplastic or slightly plastic, wet.

Reaction=Mildly alkaline or moderately alkaline.

#### Bk horizons:

Hue=2.5Y or 10YR.

Value=6 or 7 dry, 4 or 5 moist.

Chroma=2 through 4.

Texture=Fine sandy loam, very fine sandy loam or loam with 15 to 35 percent fine sand or coarser; thin subhorizons of silt loam are in the upper part of some pedons.

Clay content=9 to 14 percent.

Rock fragments=5 to 30 percent, mainly pebbles.

Reaction=Moderately alkaline to very strongly alkaline.

Other features=Some pedons are underlain by gravel below 40 inches. 2C or 3C horizons may be present below 40 inches in some pedons.

Structure=Subangular blocky structure or is massive.

Consistence=Very friable or friable, moist.

## Findout Series

The Findout series consists of shallow, well drained soils that formed in residuum and colluvium derived from limestone and dolomite.

Findout soils are on hills and mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is 51 degrees F.

**Taxonomic class:** Loamy-skeletal, carbonatic, mesic Lithic Calciorthids

**Typical pedon:** Findout very gravelly loam, 8 to 30 percent slopes, in map unit 620. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles, 3 percent cobbles, and 1 percent stones.

A=0 to 3 inches; light gray (2.5Y 7/2) very gravelly loam, dark grayish brown (2.5Y 4/2) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; very few very fine roots; few very fine vesicular and common very fine tubular and interstitial pores; 35 percent pebbles and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk1=3 to 8 inches; pale brown (10YR 6/3) very gravelly clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; 45 percent pebbles; few fine lime pendants on pebbles; violently effervescent; strongly alkaline (pH 8.7); clear wavy boundary.

Bk2=8 to 14 inches; white (10YR 8/2) very gravelly loam, pale brown (10YR 6/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine and common medium roots; common very fine tubular pores; 35 percent pebbles few medium lime pendants on pebbles; violently effervescent; strongly alkaline (pH 8.7); clear irregular boundary.

R=14 inches; fractured limestone; some soil and few roots in fractures; some discontinuous silica and lime coatings on fractures; unfractured limestone at 19 inches.

**Type location:** Churchill County, Nevada; approximately 200 feet west and 1,500 feet south of the projected northeast corner of

section 13, T.18 N., R.32 E.; (39 degrees, 25 minutes, 35 seconds north latitude and 118 degrees, 19 minutes, 52 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in winter and early spring and for very short periods following summer thunderstorms.

**Soil temperature:** 53 to 56 degrees F.

**Depth to bedrock:** 8 to 14 inches to a lithic contact.

#### Control section:

Clay content=18 to 27 percent.

Rock fragments=35 to 50 percent, mainly pebbles.

Reaction=Moderately alkaline or strongly alkaline.

Effervescence=Strongly effervescent or violently effervescent.

Calcium carbonate equivalent=20 to 40 percent in the less than 2 millimeter fraction and 40 to 60 percent in the less than 20 millimeter fraction.

#### A horizon:

Hue=2.5Y or 10YR.

Value=6 or 7 dry, 4 or 5 moist.

Chroma=2 or 3.

#### Bk1 horizon:

Value=6 or 7 dry, 4 through 6 moist.

Chroma=2 through 4.

Rock fragments=35 to 50 percent, mainly pebbles.

Texture=Loam or clay loam.

Clay content=25 to 35 percent.

Identifiable secondary carbonates: Lime is segregated on rock fragments as few coats or pendants.

#### Bk2 horizon:

Value=7 or 8 dry, 4 through 6 moist.

Chroma=2 or 3.

Rock fragments=35 to 50 percent, mainly pebbles.

Identifiable secondary carbonates: Lime is segregated on rock fragments as few coats or pendants.

## Fubble Series

The Fubble series consists of shallow, well drained soils that formed in residuum derived from metamorphic rocks. Fubble soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 49 degrees F.

**Taxonomic class:** Loamy, mixed, mesic Lithic Xerollic Haplargids

**Typical pedon:** Fubble very stony loam, 8 to 50 percent slopes, in map unit 270. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 10 percent cobbles and 3 percent stones.

A1 = 0 to 2 inches; light brownish gray (10YR 6/2) very stony loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure; soft, very friable, slightly sticky and nonplastic; few very fine roots; common very fine interstitial and few very fine and fine tubular pores; 10 percent cobbles and 3 percent stones; neutral (pH 6.8); clear smooth boundary.

A2 = 2 to 4 inches; pale brown (10YR 6/3) gravelly loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine and few very fine roots; common very fine tubular pores; 25 percent pebbles; neutral (pH 6.8); clear smooth boundary.

Bt1 = 4 to 8 inches; pale brown (10YR 6/3) gravelly loam, dark brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, sticky and plastic; few very fine and fine roots; common very fine and fine tubular pores; few thin clay films bridging sand grains; 25 percent pebbles; neutral (pH 6.8); clear smooth boundary.

Bt2 = 8 to 14 inches; pale brown (10YR 6/3) gravelly clay loam, dark brown (10YR 4/3) moist; weak coarse prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, very friable, sticky and plastic; few very fine and fine roots; common very fine and fine tubular pores; common thin clay films bridging sand grains; 25 percent pebbles; neutral (pH 6.8); abrupt wavy

boundary.

Bk = 14 to 19 inches; pale brown (10YR 6/3) gravelly loam, dark brown (10YR 4/3) moist; massive; hard, friable, sticky and slightly plastic; few very fine roots; few very fine tubular pores; common fine seams of lime; 20 percent pebbles; slightly effervescent; neutral (pH 7.2); abrupt wavy boundary.

R = 19 inches; hard metamorphic rock.

**Type location:** Churchill County, Nevada; in the Sand Springs Mountains; approximately 30 miles southeast of Fallon; 500 feet east and 2,200 feet north of the projected southwest corner of section 28, T.15 N., R.32 E.; (39 degrees, 07 minutes, 59 seconds north latitude and 118 degrees, 23 minutes, 08 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* Moist in winter and spring, dry in summer and autumn.

*Soil temperature:* 50 to 54 degrees F.

*Depth to bedrock:* 14 to 20 inches to a lithic contact.

#### *Control section:*

Clay content = 25 to 35 percent.

Rock fragments = 15 to 35 percent, predominantly pebbles.

#### **A horizons:**

Value = 6 or 7 dry, 3 through 5 moist.

Chroma = 2 or 3, dry or moist.

Reaction = Neutral or mildly alkaline.

#### **Bt horizons:**

Value = 6 or 7 dry, 3 or 4 moist.

Chroma = 2 through 4 dry or moist.

Structure = Weak prismatic; or moderate fine and medium subangular blocky.

Reaction = Neutral to moderately alkaline.

#### **Bk horizon:**

Value = 6 or 7 dry, 3 or 4 moist.

Chroma = 2 through 4, dry or moist.

Rock fragments = 15 to 35 percent, predominantly pebbles.

Reaction = Neutral to moderately alkaline.

Calcium carbonate equivalent = 1 to 5 percent.

## Gabbvally Series

The Gabbvally series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks.

Gabbvally soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic  
Lithic Xerollic Haplargids

**Typical pedon:** Gabbvally very stony loam, 30 to 50 percent slopes, in map unit 1013. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 45 percent pebbles, 10 percent cobbles, and 5 percent stones.

A=0 to 4 inches; pale brown (10YR 6/3) very stony loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine and fine tubular and interstitial pores; 25 percent pebbles and 5 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

Bt1=4 to 8 inches; light yellowish brown (10YR 6/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common very fine and fine tubular and interstitial pores; 35 percent pebbles; common thin clay films on faces of peds; mildly alkaline (pH 7.5); clear smooth boundary.

Bt2=8 to 13 inches; light yellowish brown (10YR 6/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; common very fine and few fine and medium roots; common very fine and fine and few medium tubular pores; 40 percent pebbles; many thin clay films on faces of peds and lining pores; mildly alkaline (pH 7.6); clear smooth boundary.

R=13 inches; hard rhyolite.

**Type location:** Churchill County, Nevada;  
approximately 14 miles south of Frenchman;

2,800 feet west and 1,800 feet north of the projected southeast corner of section 17, T.14 N., R.33 E.; (39 degrees, 04 minutes, 42 seconds north latitude and 118 degrees, 17 minutes, 06 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist in winter and spring months, dry in summer and fall except for 10 to 20 days between July and October due to convection storms.

**Soil temperature:** 53 to 59 degrees F.

**Depth to bedrock:** 6 to 14 inches to a lithic contact.

### Control section:

Clay content=15 to 25 percent.

Rock fragments=35 to 50 percent,  
predominantly pebbles.

Reaction=Neutral or mildly alkaline.

### A horizon:

Value=5 or 6 dry, 3 or 4 moist.

Chroma=3 or 4 dry or moist.

### Bt horizons:

Value=5 or 6 dry, 3 through 5 moist.

Chroma=3 or 4 dry or moist.

Texture=Sandy clay loam, loam, sandy loam.

Structure=Subangular blocky or angular blocky

Clay content=18 to 27 percent.

Rock fragments=35 to 50 percent.

Consistence=Soft or slightly hard, very friable  
or friable, slightly sticky or sticky.

## Gamgee Series

The Gamgee series consists of very deep, well drained soils that formed in alluvium derived from volcanic rocks. Gamgee soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees F.

**Taxonomic class:** Fine-loamy, mixed, mesic Haplic  
Natragids

**Typical pedon:** Gamgee stony sandy loam, 2 to 15 percent slopes, in map unit 143. (Colors are for dry soil unless otherwise noted.) The soil

surface is covered with 25 percent pebbles, 10 percent cobbles, and 3 percent stones.

A1 = 0 to 2 inches; pale brown (10YR 6/3) stony sandy loam, brown (10YR 4/3) moist; weak thick platy structure; soft, very friable, nonsticky and nonplastic; many very fine interstitial pores; 20 percent pebbles; 10 percent cobbles and 3 percent stones; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2 = 2 to 3 inches; light gray (10YR 7/2) sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and nonplastic; very few very fine roots; many very fine and fine vesicular and common very fine interstitial pores; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Btn1 = 3 to 8 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; strong fine prismatic structure parting to strong fine and medium subangular blocky; hard, very friable, very sticky and plastic; few very fine and fine roots; common very fine tubular pores; many thin clay films on faces of peds and bridging sand grains; few fine lime filaments; matrix is slightly effervescent in spots; strongly alkaline (pH 8.8); clear smooth boundary.

Btn2 = 8 to 12 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; moderate fine prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, very friable, sticky and plastic; few very fine and fine roots; common very fine tubular pores; many thin clay films on faces of peds and bridging sand grains, few moderately thick clay films on faces of peds; few fine lime filaments; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

Btnk = 12 to 24 inches; light brown (7.5YR 6/4) loam, dark brown (7.5YR 4/4) moist; weak fine and medium prismatic structure parting to strong fine and medium subangular blocky; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; few thin clay films on faces of peds; many fine lime filaments; violently effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Bk1 = 24 to 31 inches; pinkish gray (7.5YR 7/2) loam, dark brown (7.5YR 4/3) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; few fine lime filaments; violently effervescent; strongly alkaline (pH 8.8); gradual wavy boundary.

Bk2 = 31 to 55 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular and common very fine interstitial pores; 10 percent pebbles; few fine soft masses of lime; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

Btkb = 55 to 60 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 5/4) moist; moderate fine and medium subangular blocky structure; hard, very friable, sticky and plastic; few very fine roots; common very fine tubular pores; common moderately thick clay films on faces of peds and lining pores; common fine lime filaments; violently effervescent; strongly alkaline (pH 8.6).

**Type location:** Churchill County, Nevada; about 14 miles southwest of Fallon near the Dead Camel Mountains; about 1,300 feet west and 1,620 feet south of the projected northeast corner of, section 7, T.17 N., R.27 E.; (39 degrees, 21 minutes, 11 seconds north latitude and 118 degrees, 59 minutes, 31 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry from mid May through November; intermittently moist for 10 to 20 days cumulative during July through September.

**Soil temperature:** 53 to 56 degrees F.

**Depth to base of natric horizon:** 20 to 30 inches.

#### Control section:

Clay content = 25 to 35 percent, with 35 to 45 percent clay in a thin subhorizon within the upper part of the natric horizon.

Rock fragments = 0 to 15 percent, mainly pebbles.

Reaction = Moderately alkaline or strongly alkaline, except for a thin A horizon in some



pedons that is neutral or mildly alkaline.

Other features = The buried Btk is not present in some pedons.

**Btn horizons:**

Hue = 7.5YR or 10YR.

Value = 4 through 6 dry, 4 or 5 moist.

Chroma = 3 or 4 dry, or moist.

Texture = Clay loam or loam.

Structure = Fine to coarse prismatic parting to subangular blocky.

Sodicity (SAR) = 10 to 12 in more than half of the natric horizon and 13 to 45 in the remainder of the horizon.

**Bk horizons:**

Hue = 7.5YR or 10YR.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Rock fragments = 5 to 15 percent, predominantly pebbles.

## Ganaflan Series

The Ganaflan series consists of moderately deep, well drained soils that formed in lacustrine sediments derived from mixed rocks and tufa deposits. Ganaflan soils are on lake terraces. Slopes are 2 to 4 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 51 degrees F.

**Taxonomic class:** Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents

**Typical pedon:** Ganaflan gravelly loam, 2 to 4 percent slopes, in map unit 1071. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 70 percent pebbles and 10 percent cobbles, mostly tufa.

A1 = 0 to 5 inches; light gray (10YR 7/2) gravelly loam, brown (10YR 4/3) moist; moderate thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common medium and coarse vesicular pores; 15 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

C1 = 5 to 9 inches; light gray (10YR 7/2) loam,

brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; common very fine, fine and medium roots; common fine interstitial pores; 10 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

C2 = 9 to 21 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; few very fine, fine and medium roots; common very fine and fine interstitial pores; 25 percent tufa pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt irregular boundary.

Cr = 21 to 32 inches; dendritic tufa with soil in fractures; few fine roots along upper boundary; abrupt wavy boundary.

2C' = 32 to 60 inches; light brownish gray (10YR 6/2) gravelly sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; about 1,350 feet west and 1,200 feet north of the southeast corner of section 21, T.23 N., R.26 E.; (39 degrees, 50 minutes, 33 seconds north latitude and 119 degrees, 03 minutes, 42 seconds west longitude.)

**Range in Characteristics:**

**Soil moisture:** Usually dry, moist for short periods in winter and early spring.

**Soil temperature:** 54 to 59 degrees F.

**Depth to bedrock:** 20 to 40 inches to a paralithic contact of tufa.

**Control section:**

Clay content = Averages 10 to 18 percent, sometimes strata may have up to 27 percent.

Rock fragments = Averages less than 35 percent, most of which are pebble-sized tufa fragments.

**A horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Reaction = Moderately alkaline or strongly alkaline.

**C horizons:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture = Dominantly gravelly loam or loam.

With strata of sandy loam, silt loam, silty clay loam or very fine sandy loam in some pedons.

Structure = Subangular blocky or massive.

Consistence = Soft to hard, very friable or friable.

Rock fragments = Less than 35 percent dominantly pebble-sized dendritic or thinolite tufa fragments. Some pedons have subhorizons or thin strata with 35 to 50 percent pebbles.

Reaction = Moderately alkaline through very strongly alkaline.

**Cr layer:**

Lithoid or dendritic tufa with some soil in cracks and pockets. Thin plates of harder travertine or thinolite tufa may be present in some pedons.

**2C' horizon:**

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture = Sand or coarse sand.

Clay content = 2 to 10 percent.

Rock fragments = 10 to 50 percent.

Reaction = Moderately alkaline to very strongly alkaline.

**Gardella Series**

The Gardella series consists of very shallow and shallow to a duripan, moderately well drained soils that formed in alluvium derived from mixed rocks over lacustrine sediments. Gardella soils are on lake terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Sandy, mixed, mesic, shallow  
Entic Durorthids

**Typical pedon:** Gardella gravelly silt loam, 0 to 2 percent slopes, in the Fallon-Fernley soil survey area. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 15 percent pebbles.

Az = 0 to 2 inches; light brownish gray (10YR 6/2) gravelly silt loam, dark grayish brown (10YR 4/2) moist; massive; hard, very friable, slightly sticky and nonplastic; few very fine and fine roots; many very fine and fine vesicular pores; strongly salt affected; 15 percent pebbles; slightly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

Cq = 2 to 9 inches; grayish brown (2.5Y 5/2) stratified coarse sand and coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; slightly hard and very hard, very friable and firm, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial pores; few 1 to 5 millimeter thick weakly silica cemented lenses and few 1 millimeter thick discontinuous silica laminae; 10 percent pebbles; slightly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

Cqm = 9 to 23 inches; grayish brown (2.5Y 5/2) strongly cemented duripan consisting of alternating strata of strongly silica cemented material and weakly silica cemented sand and fine sandy loam, very dark grayish brown (2.5Y 3/2) moist; massive; very hard and hard, very firm and very friable, nonsticky and nonplastic; common very fine and fine interstitial pores in the weakly cemented material; slightly effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

2C = 23 to 60 inches; grayish brown (2.5Y 5/2) silty clay, very dark grayish brown (2.5Y 3/2) moist; common fine dark yellowish brown (10YR 4/4) moist, relict mottles; moderate fine prismatic structure parting to strong fine angular blocky; very hard, very firm, very sticky and very plastic; common very fine tubular pores; common small ostracod shells; strongly effervescent; strongly alkaline (pH 8.9).

**Type location:** Churchill County, Nevada; approximately 12.5 miles north of Fallon at the center section 30, T.21 N., R.29 E.; (39 degrees, 39 minutes, 31 seconds north latitude and 118 degrees, 45 minutes, 58 seconds west longitude.)

**Range in Characteristics:**

**Soil moisture:** Moist in late autumn, winter and early spring, dry the remainder of the year.

*Soil temperature:* 53 to 59 degrees F.

*Depth to thin strongly cemented duripan:* 7 to 12 inches

**Control section:**

Clay content = Averages less than 10 percent.

Rock fragments = Averages less than 35 percent with any one horizon having up to 50 percent fine scoriaceous pebbles.

Reaction = Strongly alkaline or very strongly alkaline.

**Az horizon:**

Hue = 10YR or 2.5Y.

Value = 5 or 6 dry, 3 or 4 moist.

Structure = Thin or medium platy or horizon is massive.

Consistence = Hard or slightly hard.

Salinity (EC) = 16 to 32 mmhos/cm.

Sodicity = 13 to 45.

Other features = The darker colors are inherited from the parent material not from the organic matter content which is 0.05 to 0.5 percent. Visible salts range from few to many crystals.

**Bq horizon:**

Hue = 10YR or 2.5Y.

Value = 5 or 6 dry, 3 or 4 moist.

Texture = Stratified coarse sand to gravelly coarse sandy loam, with lenses and strata of fine sandy, very fine sandy loam, silt loam, or volcanic ash.

Structure = Thin or medium platy structure ore horizon is massive.

Salinity (EC) = 4 to 16 mmhos/cm.

Sodicity (SAR) = 13 to 30.

**Bqm horizon:**

Duripan = Strongly silica cemented zones range in thickness from 1/4 to 1 and one-half inches of sandy and loamy materials.

Discontinuous laminae up to 2 millimeters thick are on the upper and lower surfaces of platy peds.

Structure = Platy or massive.

Consistence = Very hard or extremely hard laminae and loose to hard in the uncemented portions.

**2C horizon:**

Hue = 10YR through 5Y.

Value = 3 through 5 dry, 2 through 4 moist.

Chroma = 1 through 3.

## Genegraf Series

The Genegraf series consists of very deep, well drained soils that formed in alluvium derived from volcanic rocks. Genegraf soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Fine-loamy, mixed, mesic Duric Natrargids

**Typical pedon:** Genegraf gravelly fine sandy loam, 2 to 8 percent slopes, in map unit 1232. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles and 5 percent cobbles.

A = 0 to 3 inches; light brownish gray (10YR 6/2) gravelly fine sandy loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and few fine roots; many very fine interstitial pores; 10 percent pebbles; strongly alkaline (pH 8.6); abrupt smooth boundary.

E = 3 to 6 inches; light gray (10YR 7/2) fine sandy loam, brown (10YR 5/3) moist; moderate thin and medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine and fine vesicular pores; 5 percent pebbles; slightly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

B<sub>tnk1</sub> = 6 to 13 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; hard, friable, sticky and plastic; many very fine and few fine roots; common fine tubular pores; few thick and many moderately thick clay films on faces of peds; 10 percent pebbles; few fine lime filaments coating rock fragments and 15 percent faces of peds with light gray (10YR 7/2) lime coats; strongly effervescent; very strongly alkaline (pH 9.2); abrupt wavy boundary.

B<sub>tnk2</sub> = 13 to 18 inches; light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown

(10YR 5/4) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; hard, friable, sticky and plastic; many very fine roots; common fine tubular pores; common moderately thick clay films on faces of peds and few thin clay films lining pores; many fine lime coating rock fragments and 10 percent of faces of peds coated with light gray (10YR 7/2) lime coats; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

**Bqk** = 18 to 30 inches; very pale brown (10YR 7/3) gravelly fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; hard, firm and brittle, nonsticky and nonplastic; common very fine and few fine roots; common fine tubular pores; 30 percent pebbles; continuous weak silica cementation; 15 percent strongly cemented durinodes; lime coats on rock fragments; violently effervescent; strongly alkaline (pH 8.7); clear wavy boundary.

**Bk** = 30 to 60 inches; very pale brown (10YR 7/3) very gravelly fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine and few fine roots; few fine tubular pores; 40 percent pebbles; 10 percent weakly cemented durinodes; lime coats on rock fragments; violently effervescent; strongly alkaline (pH 8.6).

**Type location:** Churchill County, Nevada; approximately 6 miles east of Frenchman Station; about 2,300 feet south and 100 feet east of the northwest corner of section 33, T.17 N., R.34 E.; (39 degrees, 17 minutes, 44 seconds north latitude and 118 degrees, 09 minutes, 59 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist November to May, dry June to October.

**Soil temperature:** 53 to 59 degrees F.

**Depth to base of natric horizon:** 11 to 24 inches.

**Depth to continuous weak brittle matrix:** 11 to 24 inches.

#### A horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Effervescence = None to strongly effervescent in the upper part, slightly effervescent to violently effervescent in the lower part.

Reaction = Moderately alkaline or strongly alkaline.

#### Btk horizons:

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = (less than 2mm) Loam, clay loam, or sandy clay loam.

Clay content = 25 to 35 percent.

Rock fragments = Averages 10 to 25 percent, pebbles when mixed, usually increasing with depth.

Effervescence = Strongly effervescent or violently effervescent throughout.

Reaction = Strongly alkaline or very strongly alkaline.

Sodicity (SAR) = 31 to 90 percent.

#### Bqk and Bk horizons:

Value = 6 through 8 dry, 5 or 6 moist.

Chroma = 2 through 4.

Texture = (less than 2mm) Sandy loam, fine sandy loam, loamy sands, loam. Thin Bqk horizons underlying the natric horizons of some pedons are gravelly clay loam.

Rock fragments = 25 to 50 percent mainly pebbles, increasing with depth, with up to 60 percent in the lower horizons.

Cementation = Weak continuous brittle matrix in the upper Bqk subhorizon and weak continuous, weak discontinuous, or 0 to 30 percent weak to strongly cemented durinodes in the lower Bqk or Bk subhorizons.

Reaction = Moderately alkaline to very strongly alkaline.

Sodicity (SAR) = 31 to 45.

## Goldyke Series

The Goldyke series consists of very shallow, well drained soils, that formed in residuum and colluvium derived from volcanic rocks. Goldyke soils are on hills and rock pediments. Slopes are 8 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 51 degrees F.

**Taxonomic class:** Loamy, mixed (calcareous), mesic, shallow Typic Torriorthents

**Typical pedon:** Goldyke gravelly sandy loam, 8 to 30 percent slopes, in map unit 1030. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles and 2 percent cobbles.

A=0 to 1 inch; very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

C=1 to 4 inches; very pale brown (10YR 7/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.3); abrupt wavy boundary.

Cr=4 to 21 inches; highly weathered, fractured rhyolite; common very fine and fine roots along upper boundary, few fine roots in fractures; few soft lime masses accumulating in fractures.

R=21 inches; fractured rhyolite.

**Type location:** Churchill County, Nevada; approximately 14 miles south of Middlegate; 100 feet north and 400 feet west of the Bell Flat Road turnoff from State Highway 23; 1,600 feet south and 2,300 feet north of the projected northwest corner of section 16, T.14 N., R.35 E.; (39 degrees, 04 minutes, 50 seconds north latitude and 118 degrees, 02 minutes, 51 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist in some part for short periods during the winter and early spring months, and for 10 to 20 days during July through October due to convection storms.

**Soil temperature:** 53 to 59 degrees F.

**Depth to bedrock:** 4 to 10 inches to a paralithic contact. Hard bedrock is within 40 inches.

**Control section:**

Clay content = 10 to 18 percent.

Rock fragments = 15 to 35 percent pebbles.

#### A horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Rock fragments = 20 to 35 percent pebbles.

Effervescence = Slightly effervescent to strongly effervescent.

#### C horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture = Sandy loam or fine sandy loam.

Rock fragments = 15 to 35 percent pebbles.

Effervescence = Slightly effervescent to strongly effervescent.

## Granshaw Series

The Granshaw series consists of very deep, well drained soils that formed in alluvium derived from granitic rocks. Granshaw soils are on fan aprons. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees F.

**Taxonomic class:** Coarse-loamy, mixed, mesic Typic Haplargids

**Typical pedon:** Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes, in map unit 1210. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 50 percent pebbles.

A=0 to 3 inches; pale brown (10YR 6/3) gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak coarse platy structure; slightly hard, very friable, nonsticky and nonplastic; many very fine interstitial pores; 15 percent fine pebbles; moderately alkaline (pH 7.9); clear smooth boundary.

Bt=3 to 11 inches; yellowish brown (10YR 5/4) sandy loam, dark brown (10YR 4/3) moist; weak medium and fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine, common fine and medium roots; many very fine interstitial pores; many very thin and thin clay films and bridges on sand grains; 10 percent

fine pebbles; moderately alkaline (pH 7.9); gradual wavy boundary.

Btk = 11 to 15 inches; yellowish brown (10YR 5/4) sandy loam, dark brown (10YR 4/3) moist; weak medium and fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine, common fine and medium roots; many very fine interstitial pores; many thin clay films bridging sand grains; 10 percent fine pebbles; slightly effervescent; common fine lime seams; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk1 = 15 to 24 inches; pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine, few fine and medium roots; many very fine interstitial pores; 5 percent fine pebbles; common fine lime filaments and coats on undersides of pebbles; slightly effervescent; moderately alkaline (pH 8.2); gradual wavy boundary.

Bk2 = 24 to 42 inches; pale brown (10YR 6/3) loamy sand, dark brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 5 percent fine pebbles; common fine lime filaments and lime coats on undersides of pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C = 42 to 60 inches; pale brown (10YR 6/3) gravelly coarse sand, dark brown (10YR 4/3) moist; massive, slightly hard, very friable; nonsticky and nonplastic; many very fine interstitial pores; slightly effervescent; 25 percent fine pebbles; strongly alkaline (pH 9.0).

**Type location:** Churchill County, Nevada; approximately 850 feet north and 500 feet west of the southeast corner of section 36, T.25 N., R.25 E.; (39 degrees, 59 minutes, 18 seconds north latitude and 119 degrees, 06 minutes, 54 seconds west longitude.)

#### **Range in Characteristics:**

**Soil moisture:** Usually dry, moist for short periods in winter and early spring, dry late May through November.

**Soil temperature:** 53 to 57 degrees F.

#### **Control section:**

Clay content = 10 to 17 percent.

Rock fragmentation = 0 to 15 percent, dominantly fine pebbles

Depth to base of argillic horizon = 11 to 25 inches.

Other features = In some pedons, a buried Bt horizon occur below a depth of 40 inches.

#### **A horizon:**

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 2 or 3.

Reaction = Moderately alkaline or strongly alkaline.

Other features = The surface is noneffervescent or slightly effervescent, when effervescent, it is the result of eolian lime recharge.

#### **Bt and Btk horizons:**

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Sandy loam or coarse sandy loam.

Some pedons have thin subhorizons of loam or sandy clay loam.

Clay content = 10 to 17 percent.

Rock fragments = Averages 0 to 15 percent, dominantly fine pebbles.

Reaction = Moderately alkaline or strongly alkaline.

Carbonates = Noneffervescent in the upper subhorizon and noneffervescent to strongly effervescent with small areas of segregated lime as filaments common to the lower subhorizon.

#### **Bk and C horizons:**

Value = 6 or 7 dry, 4 through 6 moist.

Chroma = 3 or 4.

Texture = Stratified coarse sandy loam to very gravelly coarse sand.

Clay content = 2 to 8 percent.

Rock fragments = Averages 5 to 35 percent, subhorizons range from 5 to 50 percent, mainly fine pebbles.

Consistence = Slightly hard or hard dry, very friable or friable moist.

Reaction = Moderately alkaline to very strongly alkaline.

Effervescence = Bk horizons are noneffervescent to strongly effervescent with C horizons

mainly noneffervescent.

Segregated lime = Bk horizons have lime coats on undersides of pebbles and few or common fine filaments throughout the horizons or as small pockets within parts of the horizon.

## Grumblen Series

The Grumblen series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Grumblen soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 51 degrees F.

**Taxonomic class:** Clayey-skeletal, montmorillonitic, mesic Lithic Xerollic Haplargids

**Typical pedon:** Grumblen very gravelly loam, 15 to 50 percent slopes, extremely stony, in neighboring Pershing County. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 50 percent pebbles, 10 percent cobbles, and 4 percent stones.

A1 = 0 to 2 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine vesicular and tubular pores; 40 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.2); abrupt smooth boundary.

A2 = 2 to 4 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common very fine roots; common very fine tubular pores; 20 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bt = 4 to 8 inches; brown (7.5YR 4/4) very gravelly clay, dark brown (7.5YR 3/4) moist; strong fine prismatic structure; hard, firm, sticky and very plastic; common very fine and few fine roots; few very fine tubular pores; continuous thin clay films on faces of peds and lining pores; 30 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.4); clear smooth boundary.

Btk1 = 8 to 12 inches; brown (7.5YR 4/4) very gravelly clay, dark brown (7.5YR 3/4) moist; strong fine subangular blocky structure; hard, firm, sticky and very plastic; common very fine and few fine mainly expd roots; few very fine tubular pores; continuous thin clay films on faces of peds and lining pores; 35 percent pebbles and 5 percent cobbles; few fine lime filaments; thin lime coatings on undersides of rock fragments; slightly effervescent matrix; moderately alkaline (pH 8.4); clear smooth boundary.

Btk2 = 12 to 18 inches; brown (7.5YR 5/4) very gravelly clay, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; hard, firm, sticky and very plastic; few very fine and fine roots; few very fine tubular pores; many thin clay films on faces of peds and lining pores; 45 percent pebbles and 5 percent cobbles; many fine and medium lime filaments; thin lime coatings on undersides of rock fragments; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

R = 18 inches; rhyolite with thin lime coats on the rock surface.

**Type location:** Pershing County, Nevada, approximately 6 miles southeast of Sulphur in an unsurveyed area about 23,800 feet north and 2,600 feet east of the northeast corner of section 6, T.33 N., R.30 E.; (40 degrees, 49 minutes, 43 seconds north latitude and 118 degrees, 38 minutes, 42 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* moist winter and spring, dry June through early November.

*Soil temperature:* 53 to 55 degrees F.

*Depth to bedrock:* 14 to 18 inches.

*Depth to carbonates:* 6 to 17 inches.

### A horizons:

Hue = 7.5YR, 10YR, or 2.5Y.

Value = 4 through 6 dry, 3 through 5 moist; the surface inches averages more than 5.5 dry and 3.5 moist after mixing.

Chroma = 2 or 3.

Structure = Platy, granular or subangular blocky.

Consistence = Soft or slightly hard dry and friable or very friable moist.

Reaction = Mildly alkaline or moderately alkaline.

**Bt horizon:**

Hue = 7.5YR or 10YR.

Value = 4 through 6 dry, 3 through 5 moist.

Chroma = 3 or 4.

Texture = Very gravelly clay, very gravelly clay loam.

Clay content = 30 to 50 percent.

Rock fragments = 35 to 60 percent, mainly pebbles.

Structure = Subangular blocky or prismatic.

Consistence = Slightly hard or hard dry and friable, firm or very firm moist.

Reaction = Mildly alkaline or moderately alkaline.

**Btk horizons:**

Hue = 7.5YR or 10YR.

Value = 4 through 7 dry and 3 through 5 moist.

Chroma = 3 or 4.

Texture = Very gravelly clay loam, very gravelly clay.

Clay content = 35 to 50 percent.

Rock fragments = 35 to 60 percent, mainly pebbles.

Structure = Subangular blocky or the lower subhorizon of some pedons is massive.

Consistence = Slightly hard or hard dry and friable, firm or very firm moist.

Carbonates = Effervescence of the matrix ranges from noneffervescent through strongly effervescent. Secondary carbonates exist as few or common filaments or as thin lime coatings on coarse fragments.

## Hapgood Series

The Hapgood series consists of deep, well drained soils that formed in colluvium derived from mixed rocks with a component of loess and volcanic ash. Hapgood soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 42 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed Pachic Cryoborolls

**Typical pedon:** Hapgood gravelly loam, 30 to 75 percent slopes, in map unit 930. (Colors are for

dry soil unless otherwise noted.) The soil surface is covered with approximately 20 percent pebbles and 5 percent cobbles.

A1 = 0 to 6 inches; brown (10YR 4/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common fine interstitial pores; 20 percent pebbles, 5 percent cobbles and 2 percent stones; neutral (pH 6.8); clear smooth boundary.

A2 = 6 to 19 inches; brown (10YR 4/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine and medium roots; common fine tubular pores; 15 percent pebbles and 5 percent cobbles; neutral (pH 6.8); clear smooth boundary.

A3 = 19 to 23 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common fine tubular pores; 30 percent pebbles and 10 percent cobbles; neutral (pH 6.8); clear wavy boundary.

C1 = 23 to 30 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine and medium roots; few fine tubular pores; 30 percent pebbles and 10 percent cobbles; neutral (pH 6.8); clear wavy boundary.

C2 = 30 to 46 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine and medium roots; few fine tubular pores; 35 percent pebbles and 10 percent cobbles; neutral (pH 6.8); clear wavy boundary.

R = 46 inches; fractured rhyolite.

**Type location:** Churchill County, Nevada; approximately 11.5 miles northwest of Cold Springs; 100 feet east and 2,300 feet south of the northwest corner of section 34, T.20 N., R.36 E.; (39 degrees, 33 minutes, 24 seconds north latitude and 117 degrees, 55 minutes, 27 seconds west longitude.)



**Range in Characteristics:**

*Soil moisture:* Moist in winter and spring, dry late July through early October.

*Soil temperature:* 38 to 47 degrees F.

*Summer soil temperature:* 55 to 59 degrees F.

*Mollic epipedon thickness:* 16 to 60 inches.

*Depth to bedrock:* 40 to 60 inches to a lithic contact.

**Control section:**

Clay content = 18 to 27 percent.

Rock fragments = 35 to 50 percent, dominantly pebbles.

Reaction = Slightly acid or neutral.

**A horizons:**

Hue = 10YR or 7.5YR.

Value = 2 through 5 dry, 2 or 3 moist.

Chroma = 1 through 3 in most pedons, chroma of 1 is common only in A1 horizon and chroma of 3 is common only in A3 horizon or below.

Base saturation = 50 to 75 percent in the upper part.

**C horizons:**

Hue = 10YR or 7.5YR.

Value = 4 through 7 dry, 3 through 5 moist.

Chroma = 2 through 6.

Texture = Predominantly loam, but strata of fine sandy loam, sandy loam, silt loam or clay loam are permissible.

Other features = Some pedons do not have C horizons where the mollic epipedon rests on the bedrock at depths less than 48 inches.

slopes, in map unit 140. (Colors are for dry soil unless otherwise noted.)

A = 0 to 10 inches; pale brown (10YR 6/3) sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine and few medium and coarse roots; many very fine interstitial pores; 5 percent pebbles; moderately alkaline (pH 8.3); clear smooth boundary.

C = 10 to 22 inches; very pale brown (10YR 7/3) sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium and coarse roots; many very fine and fine interstitial pores; 5 percent pebbles; moderately alkaline (pH 8.3); clear smooth boundary.

Ck = 22 to 60 inches; light gray (10YR 7/2) fine sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium and coarse roots; many very fine and fine interstitial pores; 5 percent pebbles; lime segregated as few fine coats on pebbles; strongly effervescent; strongly alkaline (pH 8.7).

**Type location:** Churchill County, Nevada; approximately 7.5 miles west of Frenchman; 1,800 feet south and 1,960 feet east of the northwest corner of section 17 T.16 N., R.32 E.; (39 degrees, 15 minutes, 06 seconds north latitude and 118 degrees, 25 minutes, 01 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry, moist for short periods during winter and spring.

*Soil temperature:* 53 to 57 degrees F.

**Control section:**

Rock fragments = 0 to 15 percent pebbles.

**A horizon:**

Hue = 10YR or 2.5Y.

Value = 5 through 7 dry, 3 through 5 moist.

Chroma = 2 or 3.

Reaction = Neutral to moderately alkaline.

**C and Ck horizons:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

**Hawsley Series**

The Hawsley series consists of very deep, somewhat excessively drained soils that formed in alluvium and water reworked eolian sand derived from mixed rocks. Hawsley soils are on sand sheets. Slopes are 0 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is 52 degrees F.

**Taxonomic class:** Mixed, mesic Typic Torripsamments

**Typical pedon:** Hawsley sand, 2 to 8 percent

Chroma = 2 or 3.

Texture = Stratified fine sand through coarse sand. Mixed texture is commonly sand but is fine sand in some pedons. Some pedons contain thin strata of loamy fine sand.

Structure = Single grain or massive.

Consistence = Loose or soft and very friable.

Reaction = Commonly moderately alkaline or strongly alkaline, but is mildly alkaline in the upper part in some pedons.

Effervescence = Some subhorizons are slightly effervescent to violently effervescent.

Other features = Some pedons have strata with relict redoximorphic features as masses of iron accumulation with hue of 7.5YR.

## Hessing Series

The Hessing series consists of very deep, well drained soils that formed in alluvium with some influence from mixed rocks, loess, and volcanic ash. Hessing soils are on beach plains, fan skirts, inset fans, and lagoons. Slopes are 0 to 4 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 50 degrees F.

**Taxonomic class:** Coarse-loamy, mixed, mesic Typic Camborthids

**Typical pedon:** Hessing silt loam, 2 to 4 percent slopes, in map unit 420. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 4 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; common fine interstitial pores; moderately alkaline (pH 8.2); clear smooth boundary.

A2 = 4 to 7 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; weak medium platy structure parting to moderate medium subangular blocky; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; few fine tubular and interstitial pores; moderately alkaline (pH 8.4); clear smooth boundary.

Bw = 7 to 13 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; common fine tubular pores; moderately alkaline (pH 8.4); gradual smooth boundary.

Bk1 = 13 to 20 inches; light gray (10YR 7/2) very fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; common fine tubular pores; 3 percent pebbles; thin lime coats on undersides of pebbles; strongly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

2Bk2 = 20 to 27 inches; light gray (10YR 7/2) gravelly loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine and medium roots; few fine tubular pores; 20 percent pebbles; thin lime coats on undersides of pebbles; strongly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

3Ck = 27 to 60 inches; very pale brown (10YR 7/3) very gravelly loamy coarse sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; pockets of common fine roots; 50 percent pebbles; thin lime coats on undersides of pebbles; strongly effervescent; strongly alkaline (pH 8.8).

**Type location:** Churchill County, Nevada; approximately 16 miles northwest of Cold Springs; 200 feet south and 1,900 feet east of the northeast corner of section 30, T.20 N., R.39 E.; (39 degrees, 34 minutes, 39 seconds north latitude and 117 degrees, 38 minutes, 11 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* Usually dry, moist for short periods in winter and spring, dry summer and fall.

*Soil temperature:* 47 to 53 degrees F.

*Depth to base of cambic horizon:* 11 to 20 inches.

*Control section:*

Clay content = 8 to 18 percent, when mixed.

Rock fragments = 15 to 35 percent, when mixed.

Depth to 2Bk horizon = 15 to 25 inches.

Depth to 3Ck horizon = 25 to 36 inches.  
 Other features = Up to 50 percent thin discontinuous, weak, silica- cemented lenses, and up to 20 percent weak durinodes are present in any horizons below 11 inches in some pedons.

**A horizons:**

Hue = 2.5Y or 10YR.  
 Value = 6 or 7 dry, 4 or 5 moist.  
 Chroma = 2 or 3.  
 Reaction = Moderately alkaline or strongly alkaline.  
 Other features = Some pedons have slightly effervescent surfaces due to calcareous dust recharge.

**Bw horizon:**

Hue = 2.5Y or 10YR.  
 Value = 6 or 7 dry, 4 or 5 moist.  
 Chroma = 2 through 4.  
 Texture = Silt loam or silty clay loam.  
 Structure = Platy, prismatic or blocky, or it is massive.  
 Consistence = Slightly sticky or sticky, slightly plastic to very plastic, slightly hard or hard dry, very friable or friable moist.

**Bk horizon:**

Texture = Very fine sandy loam or silt loam.

**2Bk horizon:**

Texture = Gravelly loam or gravelly sandy loam.  
 Clay content = 15 to 27 percent.  
 Rock fragments = 15 to 35 percent pebbles.  
 Consistence = Soft or slightly hard, dry, slightly plastic or plastic, wet.  
 Effervescence = Slightly effervescent to violently effervescent.

**3Ck horizon:**

Texture = Stratified very gravelly loamy coarse sand to extremely gravelly sand.  
 Rock fragments = 50 to 70 percent, mainly pebbles.  
 Consistence = Soft or loose, dry.  
 Reaction = Moderately alkaline or strongly alkaline.  
 Effervescence = Slightly effervescent to violently effervescent.

## Hooplite Series

The Hooplite series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Hooplite soils are on hills and mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids

**Typical pedon:** Hooplite very gravelly fine sandy loam, 15 to 50 percent slopes, in map unit 732. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 15 percent pebbles, 10 percent cobbles, and 2 percent stones.

A = 0 to 4 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, dark brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many fine and medium vesicular pores; 40 percent pebbles, 5 percent cobbles and 2 percent stones; slightly effervescent; mildly alkaline (pH 7.8); clear smooth boundary.  
 Btk = 4 to 9 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; common very fine and fine interstitial and tubular pores; 40 percent pebbles; few thin clay films on faces of peds and lining pores; common thin lime coats on undersides of pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

R = 9 inches; hard rhyolitic tuff.

**Type location:** Churchill County, Nevada; approximately 1 mile south of Buffalo Mountain, in an unsectionized area; (39 degrees, 07 minutes, 40 seconds north latitude and 117 degrees, 48 minutes, 15 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry, moist during winter and early spring, dry mid-June through October.

*Soil temperature:* 47 to 52 degrees F.

*Depth to bedrock:* 6 to 14 inches to a lithic contact.

**Control section:**

Clay content = 18 to 25 percent when mixed.

Rock fragments = 35 to 50 percent pebbles, 0 to 10 percent cobbles.

Reaction = Mildly alkaline or moderately alkaline.

Other features = Some pedons have up to 3 inches of highly fractured bedrock overlying the lithic contact.

**A horizon:**

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

Effervescence = Noneffervescent to strongly effervescent.

**Bt horizon:**

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 through 4.

Texture = Very gravelly loam or very gravelly clay loam.

Rock fragments = 35 to 50 percent, mostly pebbles.

Structure = Subangular blocky or angular blocky.

Effervescence = Slightly effervescent or strongly effervescent.

Consistence = Soft to slightly hard dry very friable to friable, slightly sticky to sticky to sticky, slightly plastic, moist to plastic, wet.

**Hooten Series**

The Hooten series consists of very shallow to a duripan, moderately well drained soils that formed in lacustrine sediments derived from volcanic rocks. Hooten soils are on lake terraces and beach terraces. Slopes are 0 to 4 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 54 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic, shallow Entic Durorthids

**Typical pedon:** Hooten very gravelly sand, 0 to 4 percent slopes, in map unit 600. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 75 percent fine basaltic pebbles.

A = 0 to 1 inch; pale brown (10YR 6/3) very gravelly sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; few fine and medium roots; 50 percent pebbles; very strongly alkaline (pH 9.4); abrupt smooth boundary.

Bw = 1 to 3 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure; slightly hard, friable, sticky and plastic; few fine and medium roots; many fine and medium vesicular pores; 35 percent pebbles; strongly effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

Bk = 3 to 6 inches; light brownish gray (10YR 6/2) very gravelly sandy clay loam, brown (10YR 4/3) moist; weak medium platy structure; slightly hard, friable, sticky and plastic; common fine and medium roots; few fine vesicular and tubular pores; few fine soft masses of lime; 45 percent pebbles; strongly effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

2Bqm = 6 to 12 inches; light gray (10YR 7/2) strongly silica-cemented duripan, light brownish gray (10YR 6/2) moist; massive; extremely hard, very firm; slightly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

2Bq = 12 to 19 inches; light brownish gray (10YR 6/2) gravelly sand, very dark grayish brown (10YR 3/2) moist; massive; very hard, firm and brittle, nonsticky and nonplastic; 15 percent pebbles; discontinuous brittle matrix; strongly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

3C = 19 to 40 inches; light brownish gray (10YR 6/2) very fine sandy loam, dark grayish brown (10YR 4/2) moist; massive; hard, friable, nonsticky and nonplastic; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

3Cq1 = 40 to 46 inches; light brownish gray (10YR 6/2) very fine sandy loam, grayish brown (10YR 5/2) moist; massive; hard, friable, nonsticky

and nonplastic; common very fine interstitial pores; few 1/16 inch thick discontinuous weakly silica cemented lenses; slightly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

3Cq2 = 46 to 60 inches; light gray (10YR 7/2) and brown (10YR 5/3) stratified fine sandy loam and silt loam, dark grayish brown (10YR 4/2) moist; massive; hard, friable, nonsticky and nonplastic; common very fine interstitial pores; few 1/16 inch thick discontinuous weakly silica cemented lenses; strongly effervescent; strongly alkaline (pH 8.8).

**Type location:** Churchill County, Nevada; approximately 13.5 miles north of Fallon; 800 feet north and 1,600 feet west of the southeast corner of section 23, T.21 N., R.28 E.; (39 degrees, 40 minutes, 05 seconds north latitude and 118 degrees, 48 minutes, 00 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Moist in winter and early spring, dry in late spring, summer, and fall.

**Soil temperature:** 51 to 58 degrees F.

**Depth to thin strongly-cemented duripan:** 5 to 10 inches.

#### Control section:

Clay content = 20 to 30 percent.

Rock fragments = 35 to 50 percent pebbles (less than 1/2 inch in diameter), may contain 30 to 60 percent in any one stratum.

Other features = Some pedons have thin Bq horizons below the duripan.

#### A horizon:

Value = 4 through 6 dry, 2 through 4 moist.  
Chroma = 2 or 3.

Reaction = Strongly alkaline or very strongly alkaline.

#### Bw and Bk horizons:

Hue = 10YR or 7.5YR.

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture = (Less than 2mm) clay loam, sandy clay loam, or loam.

Clay content = 25 to 35 percent.

Rock fragments = 35 to 50 percent fine pebbles.

Structure = Weak or moderate, medium or coarse, prismatic or platy.

Reaction = Strongly alkaline or very strongly alkaline.

Salinity (EC) = 16 to 32 mmhos/cm.

Sodicity (SAR) = 13 to 45.

Effervescence = Strongly effervescent or violently effervescent, some pedons are noneffervescent in the upper part.

#### Bqm horizon:

Other features = Bqm horizons have very thin (less than 1/8 inch thick) continuous silica-cemented laminae dominantly oriented horizontally. Some laminae have lime coats with value of 8 dry and 6 moist. Diagonal and vertical laminae and silica-lined pores and bridging also occur.

#### Bq horizon:

Structure = Platy or massive.

#### C horizon:

Hue = 10YR or 2.5Y.

Value = 4 through 7 dry, 2 through 5 moist.

Chroma = 1 through 3.

Texture = Finely stratified coarse sand to silt loam with up to 90 percent pebbles in any horizon.

Structure = Platy or massive.

Effervescence = Noneffervescent to strongly effervescent.

## Hopeka Series

The Hopeka series consists of very shallow, well drained soils that formed in residuum and colluvium derived from limestone and dolomite. Hopeka soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 43 degrees F.

**Taxonomic class:** Loamy-skeletal, carbonatic, frigid Lithic Xeric Torriorthents

**Typical pedon:** Hopeka very gravelly loam, 30 to 50 percent slopes, in map unit 433. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 50 percent pebbles and 5 percent cobbles.

A=0 to 4 inches; light brownish gray (10YR 6/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure; soft, very friable, slightly sticky and slightly plastic; common fine vesicular pores; few very fine and fine tubular pores; 50 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

C=4 to 9 inches; light brownish gray (10YR 6/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; common fine tubular pores; 40 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

R=9 inches; hard limestone bedrock.

**Type location:** Churchill County, Nevada; approximately 38 miles northeast of Cold Springs; 1,200 feet south and 1,200 feet west of the northeast corner of section 36, T.25 N., R.39 E.; (39 degrees, 59 minutes, 44 seconds north latitude and 117 degrees, 32 minutes, 12 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry; moist in winter and spring, dry June through mid-October.

**Depth to bedrock:** 4 to 10 inches to a lithic contact.

**Soil temperature:** 43 to 47 degrees.

#### Control section:

Clay content = 18 to 27 percent.

Rock fragments = 35 to 60 percent limestone or dolomite pebbles, cobbles, or stones.

Effervescence = Violently effervescent, but some surface layers are strongly effervescent.

Calcium carbonate equivalent = 30 to 50 percent in the less than 2 millimeter fraction  
40 to 85 percent in the less than 20 millimeter fraction.

Reaction = Moderately alkaline or strongly alkaline.

#### A horizon:

Hue = 10YR or 7.5YR.

Value = 5 through 7 dry, 3 or 4 moist.

Chroma = 2 or 3.

#### C horizon:

Hue = 10YR or 7.5YR.

Value = 5 through 7 dry, 3 or 4 moist.

Chroma = 2 or 3.

Structure = Weak to moderate subangular blocky or it is massive.

Consistence = Soft or slightly hard dry, very friable or friable.

## Huxley Series

The Huxley series consists of very deep, moderately well drained soils that formed in lacustrine sediments derived from mixed rocks. Huxley soils are on lake terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees F.

**Taxonomic class:** Clayey-skeletal over sandy or sandy-skeletal, montmorillonitic, mesic Typic Natrargids

**Typical pedon:** Huxley gravelly clay loam, 0 to 2 percent slopes, in map unit 290. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent tufa pebbles.

A=0 to 2 inches; pale brown (10YR 6/3) gravelly clay loam, brown (10YR 5/3) moist; strong medium platy structure; slightly hard, friable, sticky and plastic; many fine and medium vesicular pores; 20 percent tufa pebbles; strongly effervescent; very strongly alkaline (pH 9.2); abrupt smooth boundary.

B<sub>tn1</sub> = 2 to 8 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to weak medium subangular blocky; hard, friable, sticky and plastic; few fine tubular pores; many moderately thick clay films, lining pores, on faces of peds and bridging and coating mineral grains; 35 percent tufa pebbles and 5 percent tufa cobbles; slightly effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

B<sub>tn2</sub> = 8 to 10 inches; yellowish brown (10YR 5/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to moderate medium

subangular blocky; hard, friable, sticky and plastic; few fine interstitial pores; many moderately thick clay films lining pores, on faces of peds and bridging and coating mineral grains; 35 percent tufa pebbles and 5 percent tufa cobbles; strongly effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

**2C** = 10 to 60 inches; light brownish gray (2.5Y 6/2) stratified fine sand and coarse sand, olive brown (2.5Y 4/4) moist, few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; massive; soft, very friable, nonsticky and nonplastic; many very fine interstitial pores; strongly effervescent; very strongly alkaline (pH 9.1).

**Type location:** Churchill County, Nevada; approximately 15 miles north of Fallon; 1,100 feet north and 1,100 feet west of the southeast corner of section 13, T.21 N., R.28 E.; (39 degrees, 41 minutes, 00 seconds north latitude and 118 degrees, 46 minutes, 45 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Moist from December through April, dry from May through November.

*Soil temperature:* 53 to 57 degrees F.

*Depth to strongly contrasting horizons:* 8 to 15 inches.

*Depth to base of natric horizon:* 4 to 10 inches.

#### Control section:

Clay content = 35 to 50 percent in the upper part.

Rock fragments = 35 to 60 percent in the upper part, mainly pebbles of tufa.

#### A horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

#### Btn horizons:

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture (less than 2 mm) = Clay loam or clay.

Clay content = 35 to 50 percent.

Rock fragments = 35 to 50 percent.

Consistence = Hard or very hard, dry, sticky or very sticky and plastic or very plastic wet.

Sodicity (SAR) = 13 to 45.

Other features = A discontinuous tufa layer below or in the lower Btn horizon in some pedons.

#### 2C horizon:

Hue = 10YR or 2.5Y.

Value = 4 or 5 moist.

Chroma = 2 through 4.

Texture = Stratified very fine sand to coarse sand, with thin lenses of loamy sand in some pedons.

Rock fragments = 0 to 15 percent, some pedons have gravelly substrata.

Structure = Structureless, single grain or massive.

Effervescence = Noneffervescent to strongly effervescent.

## Inmo Series

The Inmo series consists of very deep, excessively drained soils that formed in alluvium derived from granitic, volcanic, and metamorphic rocks. Inmo soils are on alluvial fans, inset fans, and in drainageways. Slopes are 2 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Sandy-skeletal, mixed, mesic Typic Torriorthents

**Typical pedon:** Inmo gravelly sandy loam, 2 to 8 percent slopes, in map unit 180. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 20 percent pebbles.

**A** = 0 to 8 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/3) moist; moderate medium and thick platy structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; many very fine vesicular and common fine interstitial pores; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

**C1** = 8 to 15 inches; very pale brown (10YR 7/3) very gravelly loamy coarse sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine roots; many

fine interstitial pores; 35 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C2 = 15 to 40 inches; very pale brown (10YR 7/3) very gravelly coarse sand, light yellowish brown (10YR 6/4) moist; single grain; loose, nonsticky and nonplastic; few very fine, fine and medium roots; many fine interstitial pores; 55 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

C3 = 40 to 60 inches; light yellowish brown (10YR 6/4) very gravelly loamy coarse sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots; common very fine interstitial pores; 50 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 7 miles south of U.S. Highway 50 in Fairview Valley; 1,200 feet south and 1,400 feet east of the projected northwest corner of section 18, T.15 N., R.33 E.; (39 degrees, 09 minutes, 59 seconds north latitude and 118 degrees, 17 minutes, 56 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist for short periods in winter and spring, dry from summer to mid-fall.

*Soil temperature:* 54 to 59 degrees F.

#### Control section:

Rock fragments = 50 to 75 percent pebbles over half are fine (2 to 5 millimeters in diameter).

#### A horizon:

Hue = 2.5Y or 10YR.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3 dry or moist.

#### C horizons:

Hue = 2.5Y or 10YR.

Value = 6 or 7 dry, 4 through 6 moist.

Chroma = 2 through 4 dry or moist.

Texture (less than 2mm) = Stratified coarse sand, sand, loamy coarse sand, and loamy sand.

Consistence = Soft or slightly hard dry, very friable or friable moist, or is loose.

Reaction = Moderately alkaline to very strongly alkaline.

## Isolde Series

The Isolde series consists of very deep, excessively drained soils that formed in eolian sand derived from mixed rocks. Isolde soils are on dunes. Slopes are 0 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Mixed, mesic Typic Torripsamments

**Typical pedon:** Isolde fine sand, 4 to 15 percent slopes, in map unit 141. (Colors are for dry soil unless otherwise noted.)

A = 0 to 6 inches; light gray (10YR 7/2) fine sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; very few fine roots; many very fine and fine interstitial pores; neutral (pH 7.2); clear smooth boundary.

C = 6 to 62 inches; light gray (10YR 7/2) fine sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; mildly alkaline (pH 7.4).

**Type location:** Churchill County, Nevada; approximately 19 miles south-southeast of Fallon and one-half mile west of water tank; 700 feet south and 1,400 feet east of the projected northwest corner of section 30, T.16 N., R.30 E.; (39 degrees, 13 minutes, 28 seconds north latitude and 118 degrees, 39 minutes, 48 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist for short periods in winter and spring, dry from summer to mid fall.

*Soil temperature:* 53 to 57 degrees F.

#### Control section:

Texture = Fine sand or sand, with 50 to 80 percent passing the number 40 sieve and 0 to 10 percent passing the number 200 sieve.

Reaction = Neutral to moderately alkaline.



**A horizon:**

Hue = 10YR or 2.5Y.

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

**C horizon:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Other features = Some pedons have a 2C horizon below 40 inches. In some pedons the lower C horizon is moderately to strongly alkaline and noneffervescent to strongly effervescent.

cobbles and 5 percent stones; neutral (pH 7.2); abrupt smooth boundary.

Bt2 = 9 to 16 inches; yellowish brown (10YR 5/4) very gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure; hard, firm, sticky and plastic; few medium roots; common fine tubular pores; common moderately thick clay films on faces of peds, lining pores, and coating rock fragments; 30 percent pebbles and 10 percent cobbles; mildly alkaline (pH 7.4); abrupt wavy boundary.

R = 16 inches; hard rhyolite.

**Type location:** Churchill County, Nevada; approximately 17.5 miles north of Cold Springs; 1,850 feet south and 2,300 feet west of the northeast corner of section 28, T.21 N., R.37 E.; (39 degrees, 39 minutes, 34 seconds north latitude and 117 degrees, 49 minutes, 20 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Moist in winter and spring, dry 60 to 90 consecutive days July through October.

*Soil temperature:* 42 to 47 degrees F.

*Mollic epipedon thickness:* 7 to 15 inches; may include part of the upper Bt horizon.

*Depth to bedrock:* 10 to 20 inches to a lithic contact.

**A horizon:**

Hue = 10YR or 7.5YR.

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3.

Reaction = Neutral or mildly alkaline.

**Bt horizons:**

Hue = 7.5YR or 10YR.

Value = 4 through 6 dry and 3 or 4 moist.

Chroma = 2 through 4.

Texture = Clay or clay loam.

Clay content = 35 to 45 percent when averaged; some subhorizons range up to 50 percent clay.

Structure = Platy, prismatic or subangular blocky.

Rock fragments = 35 to 60 percent, when averaged, mainly pebbles and cobbles; some subhorizons range up to 85 percent.

**Itca Series**

The Itca series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Itca soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 43 degrees F.

**Taxonomic class:** Clayey-skeletal, montmorillonitic, frigid Lithic Argixerolls

**Typical pedon:** Itca very cobbly loam, 30 to 50 percent slopes, in map unit 381. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 15 percent pebbles and 10 percent cobbles.

A = 0 to 4 inches; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few fine vesicular pores; 15 percent pebbles, 15 percent cobbles and 5 percent stones; neutral (pH 7.2); abrupt smooth boundary.

Bt1 = 4 to 9 inches; brown (10YR 5/3) very cobbly clay loam, dark brown (10YR 3/3) moist; weak thin platy structure parting to moderate medium subangular blocky; slightly hard, friable, sticky and slightly plastic; common very fine, fine and medium roots; common fine tubular pores; common thin clay films on faces of peds and lining pores; 20 percent pebbles, 20 percent

Consistence = Slightly hard or hard dry, friable or firm moist, and sticky or very sticky wet.

Reaction = Neutral to moderately alkaline.

Other features = Some pedons have thin BC or C horizons consisting primarily of very soft decomposing rock. In the shallower pedons, the Bt horizon tongues into the bedrock fractures.

## Izo series

The Izo series consists of very deep, excessively drained soils that formed in alluvium derived from mixed rocks. Izo soils are on drainageways. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees F.

**Taxonomic class:** Sandy-skeletal, mixed, mesic Typic Torriorthents

**Typical pedon:** Izo very gravelly sand, 2 to 4 percent slopes, in map unit 1040. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 50 percent pebbles and 5 percent cobbles.

A = 0 to 4 inches; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 45 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.

C = 4 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 75 percent pebbles; slightly effervescent; moderately alkaline (pH 8.3).

**Type location:** Churchill County, Nevada; approximately 14 miles south of Frenchman; 1,600 feet west and 2,540 feet north of the southeast corner of section 18, T.14 N., R.33 E.; (39 degrees, 04 minutes, 48 seconds north latitude and 118 degrees, 18 minutes, 00 seconds west longitude.)

## Range in Characteristics:

**Soil moisture:** Usually dry, moist in some part for short periods in winter and early spring months and for 10 to 20 days cumulative between July and October due to summer convection storms.

**Soil temperature:** 53 to 59 degrees F.

**Control section:**

Rock fragments = Averages 50 to 75 percent, mainly pebbles larger than 13 millimeters in diameter.

Reaction = Moderately alkaline or strongly alkaline, commonly increasing with depth.

Effervescence = Slightly effervescent or strongly effervescent. Individual thin strata are noncalcareous in some pedons.

**A horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 3 or 4.

**C horizon:**

Hue = 2.5Y or 10YR.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Structure = Massive or single grain.

Consistence = Loose or soft, loose or very friable.

Texture (less than 2 mm fraction) = Stratified coarse sand, sand, loamy sand, loamy coarse sand.

Rock fragments = 50 to 75 percent, predominantly pebbles. Individual strata range from 15 to 85 percent rock fragments.

## Izod Series

The Izod series consists of very shallow and shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from limestone and dolomite. Izod soils are on hills. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches, and the mean annual temperature is about 47 degrees F.

**Taxonomic class:** Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents

**Typical pedon:** Izod extremely cobbly loam, 30 to 50 percent slopes, in map unit 621. (Colors are

for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles and 35 percent cobbles.

**A**=0 to 4 inches; pale brown (10YR 6/3) extremely cobbly loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; common fine vesicular pores; 30 percent pebbles and 35 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

**C**=4 to 8 inches; light brownish gray (10YR 6/2) extremely gravelly loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common fine tubular pores; 50 percent pebbles and 10 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

**R**=8 inches; hard fractured limestone.

**Type location:** Churchill County, Nevada; approximately 35.5 miles northeast of Cold Springs; 300 feet east and 500 feet south of the northwest corner of section 17, T.23 N., R.40 E; (39 degrees, 52 minutes, 03 seconds north latitude and 117 degrees, 30 minutes, 44 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist late fall through early spring, dry June through October.

**Soil temperature:** 47 to 50 degrees F.

**Depth to bedrock:** 7 to 14 inches to a lithic contact.

#### Control section:

Clay content = 18 to 25 percent.

Rock fragments = 40 to 75 percent, mainly pebbles.

Reaction = Mildly alkaline or moderately alkaline.

Calcium carbonate equivalent = 40 to 50 percent in the less-than-2-millimeter-fraction; 50 to 60 percent in the less-than-20-millimeter-fraction.

Other features = Commonly has silica and lime laminae covering up to 75 percent of the bedrock surface area.

#### A horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Effervescence = Strongly effervescent or violently effervescent.

#### C horizon:

Value = 6 through 8 dry, 4 or 5 moist.

Chroma = 2 through 4.

Structure = Weak or moderate subangular blocky or the horizon is massive.

## Jacratz Series

The Jacratz series consists of very shallow, well drained soils on mountain sideslopes that formed in residuum and colluvium derived from sedimentary rocks. Jacratz soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 48 degrees F.

**Taxonomic class:** Loamy, mixed (calcareous), mesic, shallow Xeric Torriorthents

**Typical pedon:** Jacratz very gravelly clay loam, 30 to 75 percent slopes, in map unit 790. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 60 percent pebbles, 10 percent cobbles, and 2 percent stones.

**A1**=0 to 2 inches; light brownish gray (2.5Y 6/2) very gravelly clay loam, dark grayish brown (2.5Y 4/2) moist; moderate thin medium platy structure; soft, very friable, slightly sticky and plastic; few very fine roots; many very fine and fine vesicular and few very fine and fine tubular pores; 50 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.0); clear smooth boundary.

**A2**=2 to 5 inches; light brownish gray (2.5Y 6/2) gravelly clay loam, dark grayish brown (2.5Y 4/2) moist; weak thin platy structure parting to weak fine granular; soft, very friable, sticky and plastic; many very fine and fine roots; many very fine and fine interstitial and few very fine and fine tubular pores; 15 percent hard pebbles and 20 percent soft platy pebble-sized fragments; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

**C**=5 to 8 inches; light brownish gray (2.5Y 6/2) gravelly clay loam, dark grayish brown (2.5Y

4/2) moist; massive; slightly hard, friable, sticky and plastic; common very fine, fine and few medium roots; common very fine and fine tubular pores; 20 percent hard pebbles and 20 percent soft platy pebble-sized fragments; violently effervescent; moderately alkaline (pH 8.2); clear irregular boundary.

Cr=8 to 20 inches; highly weathered shale.

**Type location:** Churchill County, Nevada; about 33 miles northeast of Fallon; 800 feet east and 500 feet south of the northwest corner of section 13, T.21 N., R.33 E.; (39 degrees, 41 minutes, 34 seconds north latitude and 118 degrees, 13 minutes, 31 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry in summer and fall and moist in winter and spring.

**Soil temperature:** 49 to 53 degrees F.

**Depth to bedrock:** 4 to 10 inches to a paralithic contact.

#### Control section:

Clay content=27 to 35 percent average when mixed.

Rock fragments=15 to 35 percent hard pebbles and 20 to 30 percent soft platy pebble sized fragments.

Reaction=Moderately alkaline or strongly alkaline.

#### A horizons:

Hue=2.5Y or 10YR.

Value=6 or 7 dry, 4 or 5 moist.

Chroma=2 or 3.

#### C horizon:

Hue=2.5Y or 10YR.

Value=5 or 6 dry, 4 or 5 moist.

Chroma=2 or 3.

Texture=Loam or clay loam.

### Jerval Series

The Jerval series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Jerval soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches

and the mean annual temperature is about 53 degrees F.

**Taxonomic class:** Fine-loamy, mixed, mesic Duric Natrargids

**Typical pedon:** Jerval gravelly very fine sandy loam, 2 to 8 percent slopes, in map unit 1180. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 90 percent pebbles and 5 percent cobbles.

A=0 to 4 inches; light brownish gray (2.5Y 6/2) gravelly very fine sandy loam, dark grayish brown (10YR 4/2) moist; weak thick platy structure; slightly hard, friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine and fine vesicular pores; 30 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

Btk1=4 to 11 inches; light yellowish brown (10YR 6/4) gravelly silty clay loam, dark yellowish brown (10YR 4/4) moist; strong medium and fine prismatic structure; hard, firm, very sticky and very plastic; many very fine and common fine and medium roots; many very fine and common fine tubular pores; 15 percent pebbles; common thin and moderately thick clay films on faces of peds and lining pores; common fine lime seams; strongly effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

Btk2=11 to 18 inches; light yellowish brown (10YR 6/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; hard, firm, sticky and plastic; many very fine and fine and common medium roots; many very fine and common fine tubular pores; 15 percent pebbles; continuous thin and very thin clay films on faces of peds and lining pores; common fine lime seams; strongly effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Bk=18 to 29 inches; very pale brown (10YR 7/3) very gravelly fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine and fine and few medium roots; many very fine and few fine tubular pores; common fine lime seams; 35 percent pebbles; strongly

effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Bqk = 29 to 60 inches; very pale brown (10YR 7/3) very gravelly fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine and few fine and medium roots; many very fine tubular pores; 40 percent pebbles; 25 percent weak discontinuous silica cementation; thick lime coatings on rock fragments; strongly and violently effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 35 miles northwest of Fallon; 2,600 feet south and 2,600 feet west of the northeast corner of section 36, T.25 N., R.27 E.; (39 degrees, 59 minutes, 29 seconds north latitude and 118 degrees, 53 minutes, 48 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually moist, moist in winter and spring and dry late May through November.

*Soil temperature:* 53 to 59 degrees F.

*Depth to base of natric horizon:* 20 to 30 inches.

#### A horizon:

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Effervescence = Noneffervescent to strongly effervescent.

#### Btk horizons:

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 3 or 4.

Texture = Gravelly clay loam or gravelly silty clay loam.

Clay content = 27 to 35 percent.

Structure = Moderate or strong, fine to coarse prismatic.

Rock fragments = 15 to 25 percent, mainly pebbles.

Consistence = Friable or firm moist, sticky or very sticky and plastic or very plastic wet.

Salinity (EC) = 8 to 16 mmhos/cm.

Sodicity (SAR) = 13 to 30.

Carbonates = Slightly effervescent or strongly effervescent.

Reaction = Moderately alkaline or strongly alkaline.

Other features = Segregated secondary carbonates are present, with segregated gypsum common to the lower subhorizon in some pedons.

#### Bkq and Bk horizons:

Value = 7 or 8 dry, 4 through 6 moist.

Chroma = 2 through 4.

Texture = Very gravelly sandy loam or very gravelly fine sandy loam.

Clay content = 5 to 12 percent.

Rock fragments = 35 to 55 percent, mainly pebbles with 0 to 5 percent cobbles.

Reaction = Moderately alkaline or strongly alkaline.

Cementation = 20 to 30 percent weak and moderately strong durinodes in a friable matrix or has weak or strong discontinuous silica cementation with thin discontinuous laminae in the Bqk horizon.

## Jobpeak Series

The Jobpeak series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks.

Jobpeak soils are on hills and mountains. Slopes are 50 to 75 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 47 degrees F.

**Taxonomic class:** Loamy-skeletal, mixed, nonacid, mesic Lithic Xeric Torriorthents

**Typical pedon:** Jobpeak very gravelly loam, 50 to 75 percent slopes, in map unit 970. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 50 percent pebbles and 30 percent cobbles.

A1 = 0 to 2 inches; light brownish gray (2.5Y 6/2) very gravelly loam, dark grayish brown (2.5Y 4/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine interstitial and common very fine tubular pores; 35 percent pebbles and 10 percent cobbles; neutral (pH 7.2); clear smooth

boundary.

A2= 2 to 8 inches; light brownish gray (2.5Y 6/2) very gravelly loam, dark grayish brown (2.5Y 4/2) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; common very fine tubular pores; 40 percent pebbles and 10 percent cobbles; mildly alkaline (pH 7.6); abrupt wavy boundary.

2R= 8 inches; hard reddish basalt.

**Type location:** Churchill County, Nevada; about 48 miles northeast of Fallon in the Stillwater Range; about 3,100 feet south and 2,400 feet west of the northeast corner of section 8, T.23 N., R 35 E.; (39 degrees, 52 minutes, 34 seconds north latitude and 118 degrees, 03 minutes, 56 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Moist in winter and spring, dry in summer and autumn.

*Soil temperature:* 47 to 52 degrees F.

*Depth to bedrock:* 4 to 12 inches to a lithic contact.

#### *Control section:*

Clay content= 10 to 18 percent.

Rock fragments= 35 to 60 percent, predominantly pebbles.

Reaction= Neutral or mildly alkaline.

#### **A horizons:**

Hue= 10YR or 2.5Y. Some pedons exhibit hue of 5YR or 7.5YR reflecting bedrock colors.

Value= 5 or 6 dry, 3 or 4 moist.

Chroma= 2 or 3, dry or moist.

Structure= Subangular blocky or platy.

## Jung Series

The Jung series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Jung soils are on mountains and hills. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees F.

**Taxonomic class:** Clayey-skeletal, montmorillonitic, mesic Lithic Xerollic Haplargids

**Typical pedon:** Jung very gravelly loam, 30 to 50 percent slopes, in map unit 324. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles and 5 percent cobbles.

A1= 0 to 3 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; 35 percent pebbles and 5 percent cobbles; neutral (pH 7.2); clear smooth boundary.

A2= 3 to 7 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few fine tubular pores; 40 percent pebbles and 5 percent cobbles; neutral (pH 7.2); clear smooth boundary.

Bt= 7 to 12 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine angular blocky structure; hard, friable, sticky and plastic; common fine and medium roots; few fine tubular pores; common moderately thick clay films on faces of peds, lining pores and coating rock fragments; 30 percent pebbles and 10 percent cobbles; moderately alkaline (pH 7.9); clear smooth boundary.

Btk= 12 to 15 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; few fine roots; few thin clay films on faces of peds, lining pores and coating rock fragments; 40 percent pebbles and 10 percent cobbles; lime coating undersides of rock fragments; strongly effervescent; moderately alkaline (pH 7.9); clear wavy boundary.

R= 15 inches; hard rhyolite.

**Type location:** Churchill County, Nevada; approximately 8 miles north of Middlegate; 700 feet east and 1,800 feet north of the southwest corner of section 22, T.18 N., R.35 E.; (39 degrees, 24 minutes, 31 seconds north latitude and 118 degrees, 02 minutes, 01 second west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry, moist winter and spring, dry mid-June through early November.

*Soil temperature:* 47 to 52 degrees F.

*Depth to bedrock:* 14 to 20 inches to a lithic contact.

**Control section:**

Clay content = 35 to 45 percent.

Rock fragments = 35 to 50 percent, mainly pebbles and cobbles.

**A horizons:**

Value = 3 or 4 moist.

Chroma = 2 or 3.

Reaction = Neutral or mildly alkaline.

**Bt horizon:**

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Very gravelly clay loam, very cobbly clay loam, and very cobbly clay.

Structure = Subangular blocky, prismatic or angular blocky structure.

Reaction = Moderate alkaline or strongly alkaline.

Consistence = Hard to very hard, friable to firm.

**Btk horizon:**

Effervescence = Slightly effervescent or strongly effervescent.

Consistence = Slightly hard to hard, very friable to firm, slightly sticky to sticky, slightly plastic to plastic.

**Juva Series**

The Juva series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Juva soils are on fan skirts, lake terraces, stream terraces, and drainageways. Slopes are 0 to 4 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees F.

**Taxonomic class:** Coarse-loamy, mixed (calcareous), mesic Typic Torrifluvents

**Typical pedon:** Juva loam, 0 to 2 percent slopes,

in map unit 340. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 2 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; common fine vesicular pores; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2 = 2 to 6 inches; brown (10YR 5/3) loam, dark brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common fine vesicular pores; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C1 = 6 to 9 inches; very pale brown (10YR 7/3) loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common fine tubular pores; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C2 = 9 to 16 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and medium roots; common fine tubular pores; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C3 = 16 to 32 inches; pale brown (10YR 6/3) stratified sand and loam, brown (10YR 4/3) moist; moderate medium platy structure; hard, friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C4 = 32 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; 10 percent pebbles; violently effervescent; strongly alkaline (pH 8.5).

**Type location:** Churchill County, Nevada; approximately 19.5 miles north of Frenchman; 500 feet east and 2,000 feet south of the northwest corner of section 2, T.19 N., R.34 E.; (39 degrees, 32 minutes, 33 seconds north latitude and 118 degrees, 07 minutes, 47 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry, moist in some part for short periods during the winter and early spring and dry from May to November.

*Soil temperature:* 53 to 57 degrees F.

**Control section:**

Rock fragments = Averages less than 35 percent, mainly pebbles.

Organic matter = Is less than 1 percent and decreases irregularly with depth.

Reaction = Mildly alkaline to very strongly alkaline.

Other features = Some pedons have thin (up to 5 inches thick) discontinuous silt loam layers.

**A horizons:**

Hue = 10YR or 2.5Y.

Value = 5 through 7 dry, 3 through 5 moist.

Chroma = 2 or 3.

Effervescence = Slightly effervescent to violently effervescent.

**C horizons:**

Hue = 10YR or 2.5Y.

Value = 5 through 7 dry, 3 through 5 moist.

Chroma = 2 through 4.

Texture = Stratified coarse sand to loam and averages sandy loam or fine sandy loam; textures may be modified by pebbles or cobbles.

Structure = Single grain, platy, subangular blocky, or it is massive.

Effervescence = Slightly effervescent to violently effervescent.

Carbonates = Dominantly disseminated but lime coating rock fragments is common.

Sodicity (SAR) = 13 to 30.

**Kolda Series**

The Kolda series consists of very deep, very poorly drained, soils that formed in alluvium derived from mixed rocks over lacustrine sediments. Kolda soils are on lake terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 46 degrees F.

**Taxonomic class:** Fine, montmorillonitic (calcareous), mesic Typic Endoaquolls

**Typical pedon:** Kolda silt loam, 0 to 2 percent slopes, in map unit 960. (Colors are for dry soil unless otherwise noted.)

A = 0 to 23 inches; very dark gray (10YR 3/1) silt loam, black (10YR 2/1) moist; massive; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and medium roots; moderately alkaline (pH 8.4); clear smooth boundary.

2Ckg1 = 23 to 34 inches; greenish gray (5G 6/1) clay, dark greenish gray (5GY 4/1) moist; massive; hard, friable, sticky and plastic; many very fine and fine roots; few thin lime filaments; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

2Ckg2 = 34 to 58 inches; light greenish gray (5GY 7/1) silty clay, grayish brown (2.5Y 5/2) moist; many medium prominent greenish gray (5GY 5/1) and dark grayish brown (10YR 4/2) iron depletions; massive; very hard, firm, very sticky and very plastic; few very fine and fine roots; few thin lime filaments; slightly effervescent; very strongly alkaline (pH 9.0); clear smooth boundary.

2Ckg3 = 58 to 65 inches; light gray (5Y 7/1) silty clay loam, light olive brown (2.5Y 5/4) moist; many medium prominent greenish gray (5GY 6/1) iron depletions; massive; very hard, firm, sticky and plastic; few fine lime concretions; strongly effervescent; very strongly alkaline (pH 9.6).

**Type location:** Churchill County, Nevada, approximately 10 miles northeast of Fernley; 1,500 feet east and 800 feet south of the northwest corner of section 18, T.21 N., R.26 E.; (39 degrees, 41 minutes, 34 seconds north latitude and 119 degrees, 06 minutes, 28 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Saturated below the soil surface due to high water table in February to July; dry in the upper part of the profile from August through September.



*Soil temperature:* 47 to 52 degrees F.

*Mollic epipedon thickness:* 10 to 23 inches.

*Control section:*

Clay content = Averages 35 to 50 percent.

Texture = Silt loam in the upper part, and clay or silty clay in the lower part.

**A horizon:**

Value = 3 through 5 dry, 2 or 3 moist.

Chroma = 2 or 3 dry, 1 through 3 moist.

Reaction = Moderately alkaline to very strongly alkaline.

**Ckg horizons:**

Hue = 2.5Y or 5Y.

Value = 6 through 8 dry, 3 through 7 moist.

Chroma = 0 through 3 dry and moist.

Structure = Moderate very fine angular blocky to medium prismatic, or is massive.

Reaction = Strongly alkaline or very strongly alkaline.

Other features = Some pedons have up to 10 percent lime nodules. Lime filaments are common in some pedons.

## Koyen Series

The Koyen series consists of very deep, well drained soils that formed in alluvium derived from volcanic rocks. Koyen soils are on alluvial fans. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is approximately 53 degrees F.

**Taxonomic class:** Coarse-loamy, mixed, mesic Typic Camborthids

**Typical pedon:** Koyen fine sandy loam, 2 to 8 percent slopes, in map unit 1030. (Colors are for dry soil unless otherwise noted.)

A = 0 to 4 inches; light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; moderate medium platy structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine and few medium roots; common very fine interstitial pores; 10 percent pebbles; moderately alkaline (pH 8.0); clear smooth boundary.

Bw1 = 4 to 10 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak

medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common very fine and fine tubular pores; 10 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bw2 = 10 to 16 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine tubular pores; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1 = 16 to 38 inches; light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, slightly sticky and nonplastic; few very fine and fine roots; common very fine interstitial and few fine tubular pores; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); gradual smooth boundary.

Bk2 = 38 to 60 inches; light brownish gray (10YR 6/2) gravelly loamy sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial and few very fine tubular pores; 30 percent pebbles; violently effervescent; strongly alkaline (pH 8.8).

**Type location:** Churchill County, Nevada; approximately 15 miles south of Middlegate; 400 feet east and 1,750 feet south of the projected northwest corner of section 16, T.14 N., R.35 E.; (39 degrees, 04 minutes, 47 seconds north latitude and 118 degrees, 03 minutes, 11 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* Usually dry, moist in some part for short periods during winters and early spring months and for 10 to 20 days cumulative between July and October due to convection storms.

*Soil temperature:* 53 to 59 degrees, F.

*Depth to secondary carbonates:* 14 to 21 inches.

*Control section:*

Clay content = 10 to 18 percent.

Rock fragments = Average 10 to 25 percent but any one horizon can contain up to 40 percent pebbles.

Reaction = Moderately alkaline or strongly alkaline.

**A horizon:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

**Bw horizons:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Structure = Appears massive but parts to weak, fine, medium, or coarse subangular blocky.

Texture = Sandy loam, some pedons have strata of fine sandy loam, loam, or loamy sand.

Effervescence = Noneffervescent except in lower part.

**Bk horizons:**

Value = 6 through 8 dry, 4 through 6 moist.

Chroma = 2 through 4.

Effervescence = Strongly effervescent or violently effervescent.

Structure = Subangular blocky or massive.

Texture = Sandy loam with some pedons having strata of fine sandy loam, loam, or loamy sand.

Consistence = Soft to hard, very friable to firm.

## Kram Series

The Kram series consists of very shallow and shallow, somewhat excessively drained soils that formed in residuum derived from limestone and dolomite. Kram soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 48 degrees, F.

**Taxonomic class:** Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents

**Typical pedon:** Kram very gravelly very fine sandy loam, 30 to 50 percent slopes, in map unit 433. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 50 percent pebbles and 5 percent cobbles.

A1 = 0 to 2 inches; grayish brown (10YR 5/2) very gravelly very fine sandy loam, very dark grayish

brown (10YR 3/2) moist; weak thin and medium platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine and fine interstitial and tubular pores; 40 percent pebbles and 10 percent cobbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2 = 2 to 5 inches; light brownish gray (10YR 6/2) very gravelly very fine sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable; slightly sticky and slightly plastic; many medium and common very fine and fine roots; common very fine and fine tubular pores; 40 percent pebbles and 10 percent cobbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C1 = 5 to 14 inches; light brownish gray (10YR 6/2) very gravelly loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine, medium and coarse roots; common very fine, fine, medium and coarse tubular pores; 45 percent pebbles and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R = 14 inches; hard limestone.

**Type location:** Churchill County, Nevada; approximately 24 miles northeast of Cold Springs; 400 feet north and 200 feet east of the southwest corner of section 9, T.20 N., R.40 E.; (39 degrees, 36 minutes, 28 seconds north latitude and 117 degrees, 29 minutes, 27 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* Usually dry mid-June through October.

*Soil temperature:* 49 to 52 degrees, F.

*Depth to bedrock:* 8 to 14 inches to a lithic contact.

**Control section:**

Clay content = 8 to 18 percent.

Rock fragments = Averages 40 to 50 percent pebbles and 5 to 10 percent cobbles and stones.

Reaction = Moderately alkaline or strongly alkaline.

Calcium carbonate equivalent = 20 to 30 percent in the less-than-2-millimeter fraction and 40 to 50 percent in the less-than-20-millimeter fraction.

**A horizons:**

Value = 4 through 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

Effervescence = Slightly effervescent to violently effervescent.

**C horizon:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 3 or 4 moist.

Chroma = 2 through 4.

Texture = Very gravelly very fine sandy loam or very gravelly loam.

Rock fragments = 45 to 55 percent pebbles, 5 to 10 percent cobbles and stones.

Structure = Subangular blocky or is massive.

Effervescence = Strongly effervescent or violently effervescent.

## Labkey Series

The Labkey series consists of very deep, somewhat excessively drained soils that formed in alluvium derived from granitic rocks. Labkey soils are on fan skirts and inset fans. Slopes are 0 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Sandy-skeletal, mixed, mesic Typic Camborthids

**Typical pedon:** Labkey gravelly sandy loam, 0 to 2 percent slopes, in map unit 1210. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles.

A = 0 to 4 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; many very fine interstitial pores; 15 percent fine pebbles; moderately alkaline (pH 7.9); clear smooth boundary.

Bw = 4 to 12 inches; light yellowish brown (10YR 6/4) gravelly coarse sandy loam, dark yellowish

brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine and medium and few coarse roots; many very fine and fine interstitial pores; 20 percent fine pebbles; moderately alkaline (pH 7.9); gradual smooth boundary.

Bk1 = 12 to 34 inches; very pale brown (10YR 7/3) stratified very gravelly coarse sand to gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few fine and medium roots; many very fine interstitial pores; 40 percent fine pebbles; common lime coats on undersides of pebbles; slightly effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.

Bk2 = 34 to 60 inches; light gray (10YR 7/2) very gravelly coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial pores; 50 percent fine pebbles; common lime coats on undersides of pebbles; slightly effervescent, moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 26 miles north of Fernley; 2,100 feet east and 2,100 feet north of the southwest corner of section 6, T.24 N., R.26 E.; (39 degrees, 58 minutes, 31 seconds north latitude and 119 degrees, 6 minutes, 20 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in winter and early spring, dry late May through November.

**Soil temperature:** 53 to 57 degrees, F.

**Depth to the base of the cambic horizon:** 10 to 17 inches.

**Depth to segregated lime:** 10 to 17 inches.

**Control section:**

Clay content = Averages 3 to 9 percent.

Rock fragments = Averages 35 to 60 percent, mainly fine pebbles.

**A horizon:**

Chroma = 2 or 3.

Other features = Dominantly noneffervescent, but some pedons are slightly effervescent to

strongly effervescent from eolian lime recharge.

**Bw horizon:**

Chroma = 3 or 4 dry, 2 through 4 moist.  
 Texture = Gravelly coarse sandy loam or gravelly sandy loam.  
 Clay content = 5 to 12 percent.  
 Rock fragments = 20 to 35 percent, mainly fine pebbles.  
 Structure = Subangular blocky or platy.  
 Consistence = Friable or very friable moist, nonsticky or slightly sticky and nonplastic or slightly plastic wet.  
 Reaction = Moderately alkaline or strongly alkaline.

**Bk horizons:**

Value = 6 or 7 dry, 4 or 5 moist.  
 Chroma = 3 or 4.  
 Texture = Stratified gravelly sandy loam to extremely gravelly coarse sand.  
 Clay content = 2 to 8 percent.  
 Rock fragments = Average 40 to 60 percent, with subhorizons containing 15 to 70 percent, mainly fine pebbles.  
 Structure = Massive or single grain.  
 Consistence = Loose to hard dry, loose to friable moist, nonsticky or slightly sticky and nonplastic or slightly plastic wet.  
 Reaction = Moderately alkaline or strongly alkaline.  
 Segregated lime = Common or many, fine or medium, filaments, soft masses, seams or thin coats on undersides of pebbles. Some pedons have underlying subhorizons that lack segregated lime.  
 Other features = Loamy substrata occur below 40 inches in some pedons.

## Labou Series

The Labou series consists of very shallow and shallow, well drained soils that formed in residuum derived from lacustrine sediments. Labou soils are on hills. Slopes are 2 to 15 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Lithic Natrargids

**Typical pedon:** Labou gravelly fine sandy loam, 2 to 15 percent slopes, in map unit 650. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 35 percent pebbles and 5 percent cobbles.

A = 0 to 3 inches; light brownish gray (10YR 6/2) gravelly fine sandy loam, dark grayish brown (10YR 4/2) moist; strong medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine, fine, medium and coarse vesicular pores; 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

E = 3 to 4 inches; light gray (10YR 7/2) fine sandy loam, grayish brown (10YR 5/2) moist; moderate thin platy structure; slightly hard, friable, nonsticky and nonplastic; few medium roots; common fine and medium tubular pores; 10 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

B<sub>tn1</sub> = 4 to 8 inches; pale brown (10YR 6/3) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; weak medium prismatic structure parting to moderate fine subangular blocky; slightly hard, friable, very sticky and very plastic; few fine and medium roots; common fine and medium tubular pores; many moderately thick clay films on faces of peds and lining pores; 40 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

B<sub>tn2</sub> = 8 to 11 inches; pale brown (10YR 6/3) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, very sticky and very plastic; common fine tubular pores; few thin clay films bridging mineral grains and lining pores; 55 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear irregular boundary.

R = 11 inches; lithoid tufa.

**Type location:** Churchill County, Nevada; approximately 14 miles southeast of Fallon in an unsectionized area; 1,200 feet east and 3,100 feet south of the northeast corner of section 36, T.18 N., R.30 E.; (39 degrees, 22 minutes, 46 seconds north latitude and 118

degrees, 33 minutes, 05 seconds west longitude.)

carbonatic cemented sinter gravel.

#### Range in Characteristics:

*Soil moisture:* Moist in winter and early spring; dry in late spring through fall.

*Soil temperature:* 51 to 57 degrees, F.

*Depth to hard bedrock:* 8 to 14 inches.

#### *Control section:*

Clay content = 25 to 35 percent.

Rock fragments = 35 to 60 percent.

Salinity (EC) = 8 to 32 mmhos/cm.

Sodicity (SAR) = 13 to 45.

#### **A horizon:**

Value = 3 or 4 moist.

Chroma = 2 or 3.

Reaction = Moderately alkaline or strongly alkaline.

#### **E horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture = Fine sandy loam or loamy fine sand.

Rock fragments = Less than 15 percent pebbles.

Structure = Platy or it is massive.

Reaction = Strongly alkaline.

Consistence = Soft or slightly hard, dry.

#### **Btn horizons:**

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Very gravelly clay loam or very gravelly clay.

Clay content = 35 to 45 percent.

Rock fragments = 35 to 60 percent, mostly pebbles.

Structure = Columnar or prismatic in the upper part and prismatic or subangular blocky in the lower part.

Reaction = Strongly alkaline or very strongly alkaline, 15 to 40 exchangeable sodium percentage in all parts.

Consistence = Slightly hard to very hard, dry.

Effervescence = Strongly or violently effervescent.

#### **R horizon:**

Carbonates = Lithoid tufa with calcium

## Layview Series

The Layview series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Layview soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is 42 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed Argic  
Lithic Cryoborolls

**Typical pedon:** Layview very gravelly sandy loam, 8 to 15 percent slopes, in map unit 740.  
(Colors are for dry soil unless otherwise noted.)  
The soil surface is covered with approximately 50 percent pebbles and 5 percent cobbles.

A1 = 0 to 1 inches; brown (10YR 5/3) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine and common medium roots; many very fine interstitial pores; 50 percent pebbles and 5 percent cobbles; neutral (pH 7.2); abrupt smooth boundary.

A2 = 1 to 5 inches; brown (10YR 5/3) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; many very fine interstitial pores; 30 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.4); clear smooth boundary.

Bt1 = 5 to 8 inches; yellowish brown (10YR 5/4) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate fine, medium, and coarse subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine and few fine and medium roots; many very fine and common fine tubular pores; 35 percent pebbles; common thin clay films on faces of peds and lining pores; mildly alkaline (pH 7.4); clear wavy boundary.

Bt2 = 8 to 13 inches; pale brown (10YR 6/3) very

gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and few fine and medium roots; many very fine and common fine tubular pores; 40 percent pebbles and 10 percent cobbles; common thin clay films on faces of peds and lining pores; mildly alkaline (pH 7.4); gradual irregular boundary.

2R = 13 inches; hard rhyolitic bedrock.

**Type location:** Churchill County, Nevada; approximately 5 miles east of Cold Springs; 1,600 feet south and 3,100 feet west of the northeast corner of section 31, T.18 N., R.38 E.; (39 degrees, 23 minutes, 04 seconds north latitude and 117 degrees, 44 minutes, 54 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** These soils are usually dry during summer and fall, moist mid-October through mid-July.

**Soil temperature:** 43 to 47 degrees, F.

**Summer soil temperature:** 50 to 59 degrees, F.

**Depth to bedrock:** 10 to 14 inches to a lithic contact.

**Mollic epipedon thickness:** 7 to 12 inches.

#### Control section:

Clay content = 18 to 30 percent.

Reaction = Neutral or mildly alkaline.

Rock fragments = 35 to 60 percent, mainly pebbles.

#### A horizons:

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3.

#### Bt horizons:

Value = 4 or 5 dry, 3 or 4 moist.

Chroma = 2 through 4.

Texture = Very gravelly loam or very gravelly clay loam.

Clay content = 22 to 35 percent.

Rock fragments = 35 to 60 percent, mainly pebbles.

Structure = Weak or moderate subangular or angular blocky.

Consistence = Soft to hard, very friable or friable, slightly sticky or sticky and slightly plastic or plastic.

## Loomer Series

The Loomer series consists of shallow, well drained soils that formed in residuum derived from volcanic rocks. Loomer soils are hills and mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees, F.

**Taxonomic class:** Clayey-skeletal, montmorillonitic, mesic Lithic Argixerolls

**Typical pedon:** Loomer gravelly loam, 15 to 50 percent slopes, in map unit 662. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 20 percent pebbles and 2 percent cobbles.

A1 = 0 to 2 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and few fine interstitial and few very fine and fine tubular pores; 25 percent pebbles and 5 percent cobbles; mildly alkaline (pH 7.8); clear smooth boundary.

A2 = 2 to 7 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; slightly hard and very friable; slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine tubular pores; 30 percent pebbles; mildly alkaline (pH 7.8); clear smooth boundary.

Bt1 = 7 to 11 inches; light yellowish brown (10YR 6/4) extremely gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, very friable, very sticky and very plastic; many very fine and fine and few medium roots; few fine interstitial and common very fine and fine tubular pores; common thin and moderately thick clay films on faces of peds and lining pores; 40 percent pebbles and 20 percent cobbles; neutral (pH 7.2); clear wavy boundary.

Bt2 = 11 to 17 inches; light yellowish brown (10YR 6/4) extremely gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, friable, very sticky and very plastic; few very fine and fine roots; many very fine and fine interstitial and few very fine and fine tubular

pores; common thin and moderately thick clay films on faces of peds and lining pores; 45 percent pebbles and 20 percent cobbles; neutral (pH 7.2); abrupt irregular boundary.

R = 17 inches; hard fractured rhyolitic tuff.

**Type location:** Churchill County, Nevada; approximately 32 miles northeast of Fallon; 900 feet west and 1,100 feet north of the southeast corner of section 34, T.21 N., R.33 E.; (39 degrees, 38 minutes, 22 seconds north latitude and 118 degrees, 14 minutes, 59 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Moist in late fall to spring, dry from summer to early fall.

**Soil temperature:** 47 to 53 degrees, F.

**Mollic epipedon thickness:** 7 to 10 inches. When mixed, the upper 7 inches has value of less than 5.5 dry and 3.5 moist and chroma of less than 3.5 moist.

**Depth to bedrock:** 14 to 20 inches to a lithic contact.

#### Control section:

Clay content = 35 to 50 percent.

Rock fragments = 60 to 80 percent, mostly angular pebbles and cobbles.

Reaction = Neutral or mildly alkaline.

Other features = Upper bedrock is commonly fractured.

#### A horizons:

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3.

#### Bt1 horizon:

Hue = 10YR or 7.5YR.

Value = 4 through 6 dry, 3 or 4 moist.

Chroma = 2 through 4.

Rock fragments = 50 to 70 percent, mainly pebbles or cobbles.

#### Bt2 and Bt3 horizons:

Hue = 5YR through 10YR.

Value = 4 through 6 dry, 3 or 4 moist.

Chroma = 3 or 4.

Texture = Extremely gravelly or extremely cobbly clay loam or clay.

Clay content = 35 to 50 percent.

Rock fragments = 60 to 80 percent, mainly angular pebbles and cobbles.

## Louderback Series

The Louderback series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed rocks. Louderback soils are on lake plains and beach plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 54 degrees, F.

**Taxonomic class:** Sandy, mixed, mesic Oxyaquic Torriothents

**Typical pedon:** Louderback sand, 0 to 2 percent slopes, in map unit 500. (Colors are for dry soil unless otherwise noted.)

A = 0 to 4 inches; very pale brown (10YR 7/3) sand, brown (10YR 5/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine interstitial pores; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

C1 = 4 to 21 inches; very pale brown (10YR 7/3) sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; common very fine interstitial pores; strongly effervescent; very strongly alkaline (pH 9.2); clear smooth boundary.

C2 = 21 to 31 inches; light gray (10YR 7/2) sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; common very fine interstitial pores; slightly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

2C3 = 31 to 37 inches; light gray (10YR 7/2) loam, dark brown (10YR 4/3) moist; massive; slightly hard, friable, sticky and slightly plastic; few fine roots; few fine tubular pores; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2C4 = 37 to 40 inches; light gray (10YR 7/2) sandy loam, dark brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; few fine tubular pores; 5 percent pebbles;

violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

3C5=40 to 60 inches; light gray (10YR 7/2) sand, dark brown (10YR 4/3) moist; massive; soft, friable, nonsticky and nonplastic; common very fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 30.5 miles northeast of Frenchman; 1,700 feet north and 250 feet west of the southeast corner of Section 21, T.21 N., R.35 E.; (39 degrees, 40 minutes, 09 seconds north latitude and 118 degrees, 02 minutes, 34 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, but moist for short periods in winter and early spring and for 10 to 20 days during the period of July through October following convection storms. The lower C horizons are saturated with ground water for at least one month in most years. The water table fluctuates between 36 and 60 inches in March through June.

**Soil temperature:** 54 to 57 degrees F.

**Effervescence:** Slightly effervescent to strongly effervescent.

#### Control section:

Percent clay=Averages 2 to 10 percent.

#### A horizon:

Hue=10YR or 2.5Y.

Value=6 through 8 dry, 4 through 6 moist.

Chroma=2 or 3.

#### C horizon:

Hue=10YR or 2.5Y.

Value=6 through 8 dry, 4 through 6 moist.

Chroma=2 through 4.

Texture=Averages sand or loamy sand.

Structure=Massive or single grain.

Consistence=Soft or slightly hard dry, or is loose.

Other features=Thin strata of sandy loam, loam, or silt loam are present within the control section.

#### 2C horizon:

Value=6 through 8 dry, 4 through 6 moist.

Chroma=2 through 4.

Reaction=Moderately alkaline or strongly alkaline.

Rock fragments=30 to 50 percent, mainly pebbles.

## Lovelock Series

The Lovelock series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rocks, diatomaceous earth, and volcanic ash. Lovelock soils are on lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees, F.

**Taxonomic class:** Fine, mixed (calcareous), mesic Fluvaquentic Endoaquolls

**Typical pedon:** Lovelock silt loam, 0 to 2 percent slopes, in map unit 1300. (Colors are for dry soil unless otherwise noted.)

A1=0 to 3 inches, gray (10YR 5/1) silt loam, very dark gray (10YR 3/1) moist; common prominent medium reddish brown (5YR 4/4) moist masses of iron accumulation; weak thick platy structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots; common fine tubular pores; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

A2=3 to 7 inches; gray (10YR 5/1) silt loam, very dark gray (10YR 3/1) moist; common prominent medium reddish brown (5YR 4/4) moist masses of iron accumulation; moderate coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, medium and coarse roots; many very fine, fine and medium tubular pores; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

A3=7 to 10 inches; dark gray (10YR 4/1) silt loam, black (10YR 2/1) moist, common prominent medium reddish brown (5YR 4/4) moist masses of iron accumulation; weak coarse subangular blocky structure parting to weak medium platy; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, medium and coarse roots; many very fine, fine and medium tubular pores; strongly



effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

C = 10 to 12 inches; very pale brown (10YR 8/3) silt loam, pale brown (10YR 6/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine tubular pores; slightly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

2ABkb = 12 to 30 inches; dark gray (10YR 4/1) silty clay loam, black (10YR 2/1) moist; moderate fine prismatic structure; hard, friable, very sticky and very plastic; many very fine roots; many very fine tubular pores; common fine lime filaments; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

2Cgkb = 30 to 60 inches; brown (10YR 5/3) stratified clay to silt loam, dark brown (10YR 4/3) moist, common medium black (5Y 2.5/1) moist, masses of manganese accumulation; massive; hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; many medium lime filaments and soft masses; few fine mollusk shells; strongly effervescent; strongly alkaline (pH 9.0).

**Type location:** Churchill County, Nevada; approximately 2,200 feet west and 2,000 feet north of the southeast corner of section 35, T.25 N., R.30 E.; (39 degrees, 59 minutes, 26 seconds north latitude and 118 degrees, 34 minutes, 41 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually saturated for one month or more during most years unless drained.

**Soil temperature:** 53 to 57 degrees, F.

**Mollic epipedon thickness:** 10 to 23 inches.

#### Control section:

Clay content = Averages 35 to 60 percent dominated by diatomaceous earth and volcanic ash.

Rock fragments = Less than 5 percent pebbles.

Carbonates = The calcium carbonate equivalent ranges from 5 to 15 percent.

Other features = Fresh water mollusk shells and shell fragments can occur in any horizon, and range from few to many. Buried thin, dark, organic matter-rich layers are common.

#### A horizons:

Hue = 10YR, 2.5Y or N.

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 0 through 2.

Other features = Particle-size analysis indicates textures are silty clay or clay but field estimates exhibit the Characteristics of a loam or silt loam.

#### C and ABkb horizons:

Hue = 10YR through 5Y.

Value = 4 through 7 dry, 2 through 5 moist.

Chroma = 1 through 3.

Structure = Subangular blocky, prismatic or horizons are massive.

Texture = Stratified loam, silt loam, silty clay loam, silty clay, and clay apparent field textures.

Reaction = Moderately alkaline or strongly alkaline.

## Luning Series

The Luning series consists of very deep, somewhat excessively drained soils that formed in eolian sand over alluvium derived from mixed rocks. Luning soils are on sand sheets. Slopes are 2 to 4 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees, F.

**Taxonomic class:** Sandy, mixed, mesic Typic Torriorthents

**Typical pedon:** Luning loamy sand, 2 to 4 percent slopes, in map unit 710. (Colors are for dry soil unless otherwise stated.)

A = 0 to 3 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; weak thick platy structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial pores; slightly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

C1 = 3 to 8 inches; pale brown (10YR 6/3) loamy fine sand, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial

pores; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

C2 = 8 to 30 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine and few medium roots; many very fine interstitial pores; 10 percent pebbles; violently effervescent; moderately alkaline (pH 8.3); abrupt wavy boundary.

2C3 = 30 to 37 inches; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; 45 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.

2C4 = 37 to 45 inches; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine and few very fine and medium roots; 10 percent pebbles and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

2C5 = 45 to 60 inches; pale brown (10YR 6/3) very gravelly sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine interstitial pores; few very fine and fine roots; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.2).

**Type location:** Churchill County, Nevada; approximately 14.5 miles south of Middlegate; 2,400 feet east and 1,950 feet north of the projected southwest corner of Section 16, T.14 N., R.35 E.; (39 degrees, 04 minutes, 32 seconds north latitude and 118 degrees, 02 minutes, 45 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist in some part for short periods during winter and spring and for 10 to 20 days cumulative between July and October due to convection storms. Dry in lower moisture control section.

**Soil temperature:** 53 to 59 degrees, F.

**Control section:**

Clay content = 2 to 8 percent.

Rock fragments = 10 to 30 dominantly pebbles with some strata containing more than 35 percent.

Other features = Thin discontinuous strata or lenses of sandy loam are in some pedons.

Effervescence = Noneffervescent to violently effervescent.

Reaction = Mildly alkaline to strongly alkaline.

#### A horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

#### C horizons:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture (less than 2 millimeters) = Loamy sand, sand, or coarse sand with thin strata of sandy loam. Averages loamy sand or sand.

Structure = Massive, subangular blocky or single grain.

Consistence = Loose or soft to slightly hard dry, loose or very friable to friable, nonsticky to slightly sticky and nonplastic to slightly plastic.

## Madeline Series

The Madeline series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Madeline soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 42 degrees, F.

**Taxonomic class:** Clayey, montmorillonitic, frigid Lithic Argixerolls

**Typical pedon:** Madeline very stony loam, 8 to 30 percent slopes, in map unit 980. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 5 percent pebbles, 5 percent cobbles, and 5 percent stones.

A = 0 to 4 inches; grayish brownish (10YR 5/2) very stony loam, dark brown (10YR 3/3) moist; moderate thin and medium platy structure;

slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine interstitial and few very fine tubular pores; 10 percent pebbles and 5 percent cobbles; neutral (pH 7.0); clear smooth boundary.

Bt1 = 4 to 12 inches; brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, very friable, sticky and plastic; common coarse and few very fine and fine roots; common very fine tubular pores; 10 percent pebbles; many thin clay films on faces of peds and lining pores; neutral (pH 7.0); clear smooth boundary.

Bt2 = 12 to 17 inches; yellowish brown (10YR 5/4) gravelly clay, dark yellowish brown (10YR 3/4) moist; strong fine and medium angular blocky structure; hard, firm, very sticky and plastic; few very fine and fine roots; common very fine tubular pores; 20 percent pebbles and 5 percent cobbles; many moderately thick clay films and few thin clay films on faces of peds and lining pores; neutral (pH 7.0); abrupt wavy boundary.

R = 17 inches; hard basalt.

**Type location:** Churchill County, Nevada; approximately 55 miles northeast of Fallon; 100 feet south and 1,500 feet west of the northeast corner of section 36, T.25 N., R.35 E.; (39 degrees, 59 minutes, 57 seconds north latitude and 117 degrees, 59 minutes, 21 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist in winter and spring, dry from July through October.

*Soil temperature:* 43 to 47 degrees, F.

*Mollic epipedon thickness:* 7 to 15 inches and includes part or all of the argillic horizon.

*Depth to bedrock:* 10 to 20 inches to a lithic contact.

#### Control section:

Clay content = 35 to 60 percent.

Rock fragments = 5 to 35 percent.

Other features = 4 to 8 inch thick BA horizon is present in some pedons.

#### A horizon:

Hue = 5YR through 10YR.

Value = 4 or 5 dry, 2 or 3 moist. A thin subhorizon may be 6 dry and 4 moist.

Chroma = 1 through 3 dry and moist.

Reaction = Slightly acid to mildly alkaline.

#### Bt1 horizon:

Hue = 5YR through 10YR.

Value = 3 through 5 dry.

Chroma = 2 or 3 moist and dry.

Texture = Sandy clay loam, sandy clay or clay loam with 25 to 40 percent clay.

Structure = Weak to strong, prismatic, subangular or angular blocky.

Consistence = Slightly hard to hard dry.

Reaction = Slightly acid to mildly alkaline.

#### Bt2 and Bt3 horizons:

Hue = 5YR through 10YR.

Value = 3 through 6 dry, 3 or 4 moist.

Chroma = 2 through 4 dry and moist.

Texture = Clay, sandy clay or clay loam with 35 to 60 percent clay.

Rock fragments = 5 to 35 percent, cobbles, stones and pebbles.

Structure = Weak to strong, prismatic, subangular or angular blocky.

Consistence = Hard to extremely hard dry, friable to very firm moist.

Reaction = Slightly acid to mildly alkaline.

## Malpais Series

The Malpais series consists of very deep, well drained soils that formed in alluvium and colluvium derived from mixed rocks. Malpais soils are on alluvial fans. Slopes are 2 to 15 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 47 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Typic Camborthids

**Typical pedon:** Malpais stony sandy loam, 4 to 15 percent slopes, in map unit 1130. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 60 percent pebbles, 20 percent cobbles, and 2 percent stones.

A = 0 to 3 inches; pale brown (10YR 6/3) stony sandy loam, dark brown (10YR 3/3) moist;

weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 20 percent pebbles, 10 percent cobbles and 1 percent stones; neutral (pH 7.0); clear wavy boundary.

Bw = 3 to 15 inches; pale brown (10YR 6/3) extremely cobbly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and few fine and medium roots; many very fine interstitial pores; 35 percent pebbles, 30 percent cobbles and 1 percent stones; neutral (pH 7.2); clear wavy boundary.

Bk1 = 15 to 28 inches; pale brown (10YR 6/3) extremely cobbly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and few fine and medium roots; many very fine interstitial pores; 35 percent pebbles, 25 percent cobbles and 1 percent stones; few fine lime seams; slightly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

Bk2 = 28 to 33 inches; pale brown (10YR 6/3) extremely cobbly sandy loam, brown (10YR 4/3) moist; massive, soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial pores; 30 percent pebbles and 35 percent cobbles; lime coating rock fragments and common thin lime filaments; slightly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Bk3 = 33 to 60 inches; pale brown (10YR 6/3) extremely cobbly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 40 percent pebbles and 25 percent cobbles; lime coating rock fragments and common thin lime filaments; slightly effervescent; strongly alkaline (pH 9.0).

**Type location:** Churchill County, Nevada; approximately 18 miles southwest of Fallon; 1,300 feet north and 1,900 feet west of the southeast corner of section 24, T.16 N., R.27 E.; (39 degrees, 13 minutes, 51 seconds north latitude and 118 degrees, 53 minutes, 46 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist in some part for short periods from mid-October to mid-May.

*Soil temperature:* 47 to 52 degrees, F.

*Depth to base of the cambic horizon:* 15 to 35 inches.

*Depth to secondary carbonates:* 6 to 25 inches.

*Control section:*

Clay content = 10 to 18 percent.

Rock fragments = 50 to 70 percent, mainly cobbles and stones.

#### A horizon:

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

Reaction = Neutral to moderately alkaline.

Effervescence = Typically noneffervescent, but is slightly effervescent in some pedons subject to recharge from dust.

Other features = Dry value of 5 is only in the surface 1 to 2 inches.

#### Bw horizon:

Value = 5 or 6 dry, 3, 4 or 5 moist.

Chroma = 2 or 3.

Structure = Weak to moderate, thin platy or medium or coarse prismatic or subangular blocky or it is massive.

Consistence = Soft to hard dry and very friable or friable moist, nonsticky or slightly sticky and nonplastic or slightly plastic wet.

Texture = Loam, fine sandy loam or sandy loam modified by pebbles, cobbles, stones or boulders.

Reaction = Neutral to moderately alkaline.

Effervescence = Noneffervescent to slight; pedons with thin lime coats on undersides of rock fragments have a noneffervescent matrix.

Other features = Values of 5 dry and 3 moist reflect lithochromic colors.

#### Bk horizons:

Hue = 10YR or 2.5Y.

Value = 5 through 7 dry, 3, 4 or 5 moist.

Chroma = 2 through 4.

Reaction = Moderately alkaline to strongly alkaline.

Secondary lime = Few to many lime coated rock fragments and soft seams and filaments of

lime.

Other features = Values of 5 dry and 3 moist reflect lithochromic colors.

## Mazuma Series

The Mazuma series consists of very deep, well drained soils that formed in alluvium and lacustrine sediments derived from mixed rocks. Mazuma soils are on lake terraces, lagoons, barrier beaches and fan skirts. Slopes are 0 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees, F.

**Taxonomic class:** Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents

**Typical pedon:** Mazuma fine sandy loam, 0 to 2 percent slopes, in map unit 643. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 2 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, slightly sticky and nonplastic; few very fine roots; common fine interstitial pores; 5 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2 = 2 to 5 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common very fine and fine vesicular pores; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A3 = 5 to 9 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; common fine tubular pores; violently effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

Bk = 9 to 25 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine and medium roots; common fine tubular pores; violently effervescent; lime disseminated throughout; very strongly alkaline (pH 9.6); clear smooth boundary.

C1 = 25 to 41 inches; pale brown (10YR 6/3) stratified sandy loam and silt loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine roots; few fine tubular pores; 5 percent pebbles; violently effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

C2 = 41 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; violently effervescent; very strongly alkaline (pH 9.6).

**Type location:** Churchill County, Nevada; approximately 18.5 miles northeast of Cold Springs; 1,200 feet east and 1,400 feet north of the southwest corner of section 27, T.21 N., R.38 E.; (39 degrees, 39 minutes, 15 seconds north latitude and 117 degrees, 41 minutes, 50 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in winter and spring, dry from summer to mid-fall.

**Soil temperature:** 53 to 57 degrees, F.

**Reaction:** Moderately alkaline to very strongly alkaline.

**Salinity (EC):** 2 to 32 mmhos/cm.

**Control section:**

Clay content = 5 to 15 percent.

Rock fragments = A few strata have up to 25 percent pebbles.

Sodicity (SAR) = 13 to 45.

### A horizons:

Hue = 10YR or 2.5Y.

Value = 5 through 7 dry; 4 through 6 moist.

Chroma = 2 through 4.

### Bk horizon:

Hue = 10YR or 2.5Y.

Value = 5 through 7 dry; 4 through 6 moist.

Chroma = 2 through 4.

Structure = Subangular blocky or it is massive.

Other features = Less than 3 percent calcium carbonate equivalent.

Consistence = Slightly hard or hard, dry.

### C horizons:

Hue = 10YR or 2.5Y.

Value = 5 through 7 dry; 4 through 6 moist.

Chroma = 2 through 4.

Texture = Stratified sandy loam, fine sandy loam, very fine sandy loam and silt loam with some pedons containing thin strata of clay loam and strata up to 12 inches thick of coarse sand, very coarse sand, fine sand or loamy sand.

Other features = Salt crystals and relict redoximorphic features are in some pedons in the lower C horizon. Lacustrine silts and clays occur below 40 inches in some pedons.

Structure = Subangular blocky, platy or is single grain or massive.

Consistence = Soft or slightly hard, dry or is loose.

## Millerlux Series

The Millerlux series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Millerlux soils are on summits of mountains. Slopes are 4 to 15 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 43 degrees, F.

**Taxonomic class:** Clayey, montmorillonitic, frigid Lithic Xerollic Haplargids

**Typical pedon:** Millerlux very stony loam, 4 to 15 percent slopes, in map unit 990. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 15 percent pebbles, 10 percent cobbles, and 3 percent stones.

A1 = 0 to 2 inches; light gray (10YR 7/2) very stony loam, dark grayish brown (10YR 4/2) moist; moderate thin platy structure; soft, very friable, sticky and slightly plastic; very few roots; common very fine interstitial and few very fine vesicular pores; 10 percent pebbles, 5 percent cobbles and 5 percent stones; moderately alkaline (pH 8.2); clear smooth boundary.

A2 = 2 to 6 inches; pale brown (10YR 6/3) stony loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, sticky and slightly plastic; few very

fine and fine roots; common very fine tubular interstitial pores; 10 percent pebbles, 5 percent cobbles and 5 percent stones; moderately alkaline (pH 8.2); abrupt wavy boundary.

Bt = 6 to 14 inches; brown (10YR 5/3), pale brown (10YR 6/3) crushed, clay, dark brown (10YR 3/3) moist; strong fine and medium angular blocky structure; hard, firm, very sticky and very plastic; few very fine and fine roots, common very fine tubular pores; many pressure cutans on faces of peds; many moderately thick clay films lining pores; 10 percent pebbles; moderately alkaline (pH 8.3); clear smooth boundary.

Btk = 14 to 19 inches; brown (10YR 5/3) gravelly clay, dark brown (10YR 4/3) moist; strong fine and medium angular blocky structure; hard, friable, very sticky and very plastic; few very fine and fine roots; common very fine tubular pores; continuous, many pressure cutans on faces of peds; many moderately thick clay films lining pores; 25 percent pebbles; thin lime coatings on undersides of pebbles; common fine lime seams; moderately alkaline (pH 8.4); abrupt wavy boundary.

R = 19 inches; hard basalt bedrock.

**Type location:** Churchill County, Nevada; approximately 55 miles northeast of Fallon; 500 feet south and 2,500 feet west of the northeast corner of section 36, T.25 N., R.35 E.; (39 degrees, 59 minutes, 56 seconds north latitude and 117 degrees, 59 minutes, 34 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry in late June through mid-October, but moist in winter and spring.

**Soil temperature:** 43 to 47 degrees, F.

**Depth to bedrock:** 12 to 20 inches to a lithic contact.

### A horizons:

Value = 5 through 7 dry, 3 or 4 moist.

Chroma = 2 or 3.

Reaction = Neutral to moderately alkaline.

### Bt horizon:

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 3 through 5 moist.

Chroma = 3 through 6, but may be 2 dry in upper part.

Clay content = 40 to 60 percent.

Structure = Fine to coarse prismatic or angular blocky.

Consistence = Hard or extremely hard, dry; firm to extremely firm, moist; sticky or very sticky and plastic or very plastic, wet.

Rock fragments = Less than 15 percent, mainly pebbles.

Reaction = Neutral to moderately alkaline.

#### **Btk horizon:**

Hue = 10YR Or 7.5YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Clay or clay loam.

Clay content = 35 to 50 percent.

Rock fragments = 10 to 30 percent, mainly pebbles.

Structure = Prismatic or angular blocky.

Reaction = Moderately alkaline or strongly alkaline.

## **Minneha Series**

The Minneha series consists of shallow, somewhat excessively drained soils that formed in residuum derived from granitic rocks. Minneha soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 48 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic, shallow Aridic Haploxerolls

**Typical pedon:** Minneha very stony loam, 30 to 50 percent slopes, in map unit 102. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 25 percent pebbles and 15 percent stones.

Oi = 1 to 0 inches; duff layer.

A1 = 0 to 5 inches; grayish brown (10YR 5/2) very stony loam, very dark grayish brown (10YR 3/2) moist; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine and common fine interstitial pores; 30 percent pebbles and 15 percent stones; neutral (pH 7.1); abrupt smooth boundary.

A2 = 5 to 12 inches; brown (10YR 5/3) very gravelly sandy loam; dark brown (10YR 3/3) moist; moderate very fine, fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine interstitial pores; 30 percent pebbles and 10 percent stones; neutral (pH 7.3); abrupt wavy boundary.

C = 12 to 16 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive, soft, very friable, nonsticky and nonplastic; common very fine and few medium roots; common very fine and fine interstitial pores; 50 percent pebbles and 5 percent stones; neutral (pH 7.3); clear wavy boundary.

Cr = 16 inches; weathered granodiorite; few fine and coarse roots within cracks in the bedrock.

**Type location:** Churchill County, Nevada; approximately 20 miles north of Cold Springs; 2,000 feet south and 1,800 feet west of the northeast corner of section 8, T.21 N., R.37 E.; (39 degrees, 42 minutes, 08 seconds north latitude and 117 degrees, 50 minutes, 14 seconds west longitude.)

#### **Range in Characteristics:**

**Soil moisture:** Usually dry; moist November through June.

**Soil temperature:** 47 to 52 degrees, F.

**Mollic epipedon thickness:** 11 to 18 inches.

**Depth to bedrock:** 13 to 20 inches to a paralithic contact.

**Control section:**

Clay content = 6 to 15 percent.

Rock fragments = 35 to 60 percent, mainly fine pebbles.

Reaction = Slightly acid to mildly alkaline.

Other features = Some pedons have thin O horizons.

#### **A horizons:**

Hue = 10YR or 2.5Y.

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 1 through 3.

#### **C horizon:**

Hue = 10YR or 2.5Y.

Value = 5 or 6 dry, 2 through 4 moist.

Chroma = 1 through 3.

Texture = Very gravelly coarse sandy loam or very gravelly sandy loam.

Rock fragments = 35 to 60 percent, mainly fine pebbles.

Reaction = Neutral or mildly alkaline.

## Mirkwood Series

The Mirkwood series consists of very shallow and shallow, well drained soils formed in residuum and colluvium derived from volcanic rocks. Mirkwood soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Lithic Haplargids

**Typical pedon:** Mirkwood extremely stony loam, 30 to 75 percent slopes, in map unit 301. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 35 percent pebbles, 15 percent cobbles, and 20 percent stones.

A = 0 to 2 inches; very pale brown (10YR 7/3) extremely stony loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; very few very fine roots; common very fine vesicular and interstitial pores; 35 percent pebbles, 10 percent cobbles and 15 percent stones; neutral (pH 7.3); clear wavy boundary.

Bt1 = 2 to 4 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; very few very fine and fine roots; common very fine and fine tubular pores; common thin clay films on faces of peds; 35 percent pebbles; neutral (pH 7.2); clear wavy boundary.

Bt2 = 4 to 9 inches; pale brown (10YR 6/3) very gravelly clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, very friable, sticky and plastic; very few very fine and fine roots; common very

fine and fine tubular pores; many thin and few moderately thick clay films on faces of peds; 40 percent pebbles; neutral (pH 7.2); abrupt wavy boundary.

Bt3 = 9 to 11 inches; light yellowish brown (10YR 6/4) crushed, very gravelly clay loam, dark yellowish brown (10YR 4/4) crushed, moist; strong fine angular blocky structure; hard, friable, sticky and plastic; very few fine roots; common very fine and fine tubular pores; many moderately thick clay films on faces of peds and lining pores; 50 percent pebbles; neutral (pH 6.8); abrupt irregular boundary.

R = 11 inches; hard fractured basalt, thin coating of CaCO<sub>3</sub> in places. Some roots and clay in fractures.

**Type location:** Churchill County, Nevada; approximately 1,300 feet east and 1,600 feet north of the southwest corner of section 19, T.16 N., R.29 E.; (39 degrees, 13 minutes, 44 seconds north latitude and 118 degrees, 46 minutes, 23 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist in some part for short periods during winter and spring and 10 to 20 days cumulative between July and October due to convection storms.

**Soil temperature:** 53 to 59 degrees, F.

**Control section:**

Clay content = 18 to 27 percent.

Rock fragments = 35 to 50 percent pebbles, cobbles, and stones.

Reaction = Neutral to strongly alkaline.

Depth to hard bedrock = 4 to 14 inches.

**A horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

**Bt horizons:**

Hue = 10YR or 7.5YR.

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture = Loam or clay loam.

Clay content = 25 to 35 percent.

Rock fragments = 35 to 50 percent.

Carbonates = Effervescent in lower part in some



pedons.

## Nayfan Series

The Nayfan series consists of moderately deep, well drained soils that formed in colluvium derived from limestone and shale over residuum derived from shale. Nayfan soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 44 degrees, F.

**Taxonomic class:** Fine-loamy, mixed, frigid Aridic Haploxerolls

**Typical pedon:** Nayfan gravelly loam, 30 to 50 percent slopes, in map unit 790. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with a duff layer of needles, leaves, and slightly decomposed organic materials.

A1 = 0 to 3 inches; grayish brown (10YR 5/2) gravelly loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and few medium interstitial pores; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw1 = 3 to 10 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; many very fine interstitial and common fine tubular pores; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bw2 = 10 to 14 inches; pale brown (10YR 6/3) gravelly loam, yellowish brown (10YR 5/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine and medium roots; many very fine and fine and common medium tubular pores; 30 percent pebbles; strongly effervescent; mildly alkaline (pH 7.6); gradual smooth boundary.

Bk = 14 to 27 inches; pale brown (10YR 6/3)

gravelly loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; many very fine, fine and medium roots; many very fine and fine interstitial and common fine tubular pores; 20 percent platy pebbles; violently effervescent; neutral (pH 7.2); gradual wavy boundary. Cr = 27 inches; weathered calcareous shale.

**Type location:** Churchill County, Nevada; approximately 30 miles north of Frenchman; 1,125 feet south and 100 feet east of the northwest corner of section 23, T.21 N., R.33 E.; (39 degrees, 40 minutes, 37 seconds north latitude and 118 degrees, 14 minutes, 50 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* Moist in winter and spring, dry in summer and early autumn.

*Soil temperature:* 44 to 47 degrees, F.

*Mollic epipedon thickness:* 7 to 12 inches.

*Depth to bedrock:* 20 to 40 inches to a paralithic contact.

#### *Control section:*

Clay content = 18 to 27 percent.

Rock fragments = 15 to 35 percent hard pebbles and up to 25 percent soft shale fragments that are easily crushed.

Reaction = Mildly alkaline or moderately alkaline.

#### **A horizon:**

Hue = 10YR or 2.5Y.

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3.

#### **Bw horizons:**

Hue = 10YR or 2.5Y.

Value = 4 through 6 dry, 3 through 5 moist.

Chroma = 2 through 4.

Clay content = 18 to 27 percent.

Other features = The Bw1 horizon is part of the mollic epipedon.

#### **Bk horizon:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 3 or 4.

Structure = Subangular blocky or horizon is massive.

## Nemico Series

The Nemico series consists of shallow to a duripan, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Nemico soils are on mountains. Slopes are 4 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees, F.

**Taxonomic class:** Clayey, montmorillonitic, mesic, shallow Typic Nadurargids

**Typical pedon:** Nemico very stony sandy loam, 8 to 30 percent slopes, in map unit 120. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 10 percent pebbles, 5 percent cobbles, and 3 percent stones.

A=0 to 3 inches; light brownish gray (10YR 6/2) very stony sandy loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure; hard, very friable, slightly sticky and nonplastic; few very fine roots; many very fine and fine vesicular pores; 10 percent pebbles, 5 percent cobbles and 10 percent stones; strongly alkaline (pH 8.5); abrupt smooth boundary.

Btn1 = 3 to 6 inches; dark yellowish brown (10YR 4/4) gravelly clay, dark yellowish brown (10YR 4/4) moist; weak medium prismatic structure parting to moderate very fine and fine subangular blocky; slightly hard, very friable, very sticky and very plastic; many very fine and fine roots; many fine interstitial and common fine tubular pores; 20 percent pebbles; many moderately thick clay films on faces of peds and lining pores; slightly effervescent; strongly alkaline (pH 8.7); clear smooth boundary.

Btn2 = 6 to 10 inches; dark yellowish brown (10YR 4/4) gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to strong medium angular blocky; hard, firm, very sticky and very plastic; many very fine and fine exped roots; common fine tubular pores; 20 percent pebbles; many pressure faces; common moderately thick clay films lining pores; slightly effervescent; strongly alkaline (pH 8.7); clear smooth boundary.

Btnk = 10 to 12 inches; light yellowish brown (10YR 6/4) gravelly clay, brown (7.5YR 4/4)

moist; moderate fine subangular blocky structure; hard, firm, very sticky and very plastic; common fine roots; few very fine and fine tubular pores; 20 percent pebbles; common moderately thick clay films on faces of peds and lining pores; 30 percent pebbles; few fine lime filaments; strongly effervescent; strongly alkaline (pH 8.7); clear smooth boundary.

Bqk = 12 to 15 inches; pink (7.5YR 8/4) gravelly loam, reddish yellow (7.5YR 6/6) moist; massive; extremely hard, firm and very brittle; 30 percent pebbles; discontinuously cemented matrix; strongly effervescent; strongly alkaline (pH 8.9); abrupt smooth boundary.

Bqkm = 15 to 16 inches; light brown (7.5YR 6/4) indurated duripan, strong brown (7.5YR 5/6) moist; massive; extremely hard; strongly effervescent; strongly alkaline (pH 9.0).

R = 16 inches; unfractured hard basalt.

**Type location:** Churchill County, Nevada; about 26 miles southeast of Fallon near the Cocoon Mountains; 800 feet south and 2,400 feet east of the projected northwest corner of section 15, T.15 N., R.31 E.; (39 degrees, 10 minutes, 03 seconds north latitude and 118 degrees, 30 minutes, 10 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist in some part for short periods during winter and early spring months, and for 10 to 20 days cumulative between July and October due to convection storms.

**Soil temperature:** 53 to 59 degrees, F.

**Depth to thin duripan:** 10 to 20 inches.

**Depth to hard bedrock:** 11 to 25 inches.

**Control section:**

Clay content = 35 to 45 percent.

Rock fragments = 15 to 35 percent.

### A horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 1 through 4.

Reaction = Neutral to strongly alkaline.

### Btn and Btnk horizons:

Hue = 10YR or 7.5YR.

Value = 4 through 6 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture (less than 2 millimeter fraction) = Clay or clay loam.

Rock fragments = Up to 35 percent.

Structure = Fine or medium prismatic parting to subangular blocky or angular blocky.

Reaction = Moderately alkaline or strongly alkaline.

Sodicity (SAR) = 31 to 60.

**Bqk horizon:**

Hue = 10YR or 7.5YR.

Value = 6 through 8 dry, 5 through 7 moist.

Reaction = Moderately alkaline or strongly alkaline.

## Nicanor Series

The Nicanor series consists of very shallow and shallow, well drained soils that formed in residuum derived from metamorphic rocks. Nicanor soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is 9 inches and the mean annual temperature is about 49 degrees, F.

**Taxonomic class:** Loamy, mixed, nonacid, mesic, shallow Xeric Torriorthents

**Typical pedon:** Nicanor stony loam, 30 to 50 percent slopes, in map unit 270. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 20 percent pebbles, 5 percent cobbles, and 1 percent stones.

A1 = 0 to 1 inch; pale brown (10YR 6/3) stony loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine vesicular pores; 15 percent pebbles, 3 percent cobbles, and 1 percent stones; neutral (pH 7.0); abrupt smooth boundary.

A2 = 1 to 2 inches; light yellowish brown (10YR 6/4) gravelly loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; 20 percent pebbles; neutral (pH 6.8); clear wavy boundary.

C = 2 to 5 inches; yellowish brown (10YR 5/6)

gravelly clay loam, dark yellowish brown (10YR 4/6) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and fine and few medium roots; common very fine tubular pores; 20 percent pebbles; neutral (pH 6.8); clear irregular boundary.

Cr = 5 to 25 inches; weathered schist; few fine and medium roots and fine lime seams occurring in fractures in the bedrock.

R = 25 inches; hard schist.

**Type location:** Churchill County, Nevada;

approximately 11 miles southwest of Frenchman; 400 feet south and 800 feet west of the projected northeast corner of section 29, T.15 N., R.32 E.; (39 degrees, 08 minutes, 26 seconds north latitude and 118 degrees, 23 minutes, 23 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry in summer and fall but moist in winter and spring.

*Soil temperature:* 49 to 52 degrees, F.

*Depth to bedrock:* 5 to 14 inches to a paralithic contact. 20 to 40 inches to hard bedrock.

*Control section:*

Clay content = 18 to 27 percent.

Rock fragments = 15 to 35 percent pebbles.

Reaction = Neutral or mildly alkaline.

**A1 horizon:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2, 3 or 4.

Structure = Weak or moderate subangular blocky or platy.

Rock fragments = 15 to 35 percent, predominantly pebbles.

**C horizon:**

Hue = 10YR or 2.5Y.

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 4 through 6.

Texture = Loam or clay loam.

Structure = Weak or moderate subangular blocky structure.

Rock fragments = 15 to 35 percent, predominantly pebbles.

## Ninemile Series

The Ninemile series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Ninemile soils are on mountains. Slopes are 4 to 15 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 43 degrees, F.

**Taxonomic class:** Clayey, montmorillonitic, frigid Lithic Argixerolls

**Typical pedon:** Ninemile very stony loam, 4 to 15 percent slopes, in map unit 990. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 5 percent pebbles, 5 percent cobbles, and 5 percent stones.

A1 = 0 to 1 inch; grayish brown (10YR 5/2) very stony loam, very dark grayish brown (10YR 3/2) moist; moderate thin and medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular and few very fine interstitial pores; 10 percent pebbles, 10 percent cobbles and 25 percent stones; neutral (pH 7.2); clear smooth boundary.

A2 = 1 to 7 inches; brown (10YR 5/3) stony loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; slightly hard, very friable, sticky and slightly plastic; common very fine and few fine roots; common very fine tubular pores; 10 percent pebbles and 20 percent stones; neutral (pH 7.2); abrupt wavy boundary.

Bt = 7 to 15 inches; yellowish brown (10YR 5/4) gravelly clay, dark yellowish brown (10YR 4/4) moist; strong medium angular blocky structure; very hard, firm, very sticky and very plastic; few very fine and fine roots; common very fine tubular pores; few thick and many moderately thick clay films on faces of peds and lining pores; 20 percent pebbles; neutral (pH 7.0); abrupt smooth boundary.

2R = 15 inches; hard basalt bedrock.

**Type location:** Churchill County, Nevada; approximately 55 miles northeast of Fallon; 2,800 feet west and 300 feet south of the northeast corner of section 36, T.25 N., R.35

E.; (39 degrees, 59 minutes, 57 seconds north latitude and 117 degrees, 59 minutes, 37 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist during the winter and spring, dry mainly during late June through early October.

**Soil temperature:** 44 to 47 degrees, F.

**Depth to bedrock:** 10 to 20 inches to a lithic contact.

**Mollic epipedon thickness:** 7 to 18 inches; commonly includes part or all of the argillic horizon.

### Control section:

Clay content = Averages 40 to 60 percent.

Rock fragments = 0 to 35 percent.

### A horizons:

Hue = 10YR or 7.5YR.

Value = 3 through 5 dry, 2 or 3 moist.

Chroma = 1 through 3.

Reaction = Slightly acid to moderately alkaline.

Other features = The upper 1 or 2 inches of some pedons have color value of 6 and are massive.

### Bt horizon:

Hue = 5YR through 10YR.

Value = 3 through 6 dry, 2 through 4 moist.

Chroma = 2 through 4, lower subhorizons have chroma of 6 in some pedons.

Clay content = Typically 40 to 60 percent.

Some subhorizons range to 35 percent.

Texture = Clay or gravelly clay, but some subhorizons range to clay loam.

Rock fragments = 0 to 30 percent pebbles or cobbles.

Structure = Moderate or strong subangular or angular blocky or prismatic, Bt3 horizons may be massive in some pedons.

Reaction = Neutral to moderately alkaline.

Consistence = Hard to extremely hard dry.

Other features = Some pedons are slightly hard dry, friable to firm moist; sticky and plastic wet in the Bt1 horizon.

### R layer:

Other features = In some pedons, where bedrock is less than 15 inches deep, the upper 1 to 3 inches is weathered.

## Olac Series

The Olac series consists of very shallow and shallow, well drained soils formed in residuum and colluvium derived from andesite and volcanic rocks. Olac soils are on hills and mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic  
Lithic Xerollic Haplargids.

**Typical pedon:** Olac extremely stony loam, 8 to 30 percent slopes, in map unit 1062. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 35 percent pebbles, 20 percent cobbles, and 20 percent stones.

A=0 to 3 inches; brown (10YR 5/3) extremely stony loam, dark brown (10YR 3/3) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; 20 percent pebbles, 10 percent cobbles and 30 percent stones; neutral (pH 6.8); clear smooth boundary.

Bt1=3 to 8 inches; brown (10YR 5/3) extremely gravelly loam, dark yellowish brown (10YR 3/4) moist; weak medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine and medium roots; continuous very thin and thin clay films on faces of peds and lining pores; many very fine and fine and few medium tubular pores; 50 percent pebbles, 15 percent cobbles and 5 percent stones; neutral (pH 6.8); clear wavy boundary.

Bt2=8 to 13 inches; brown (10YR 5/3) extremely gravelly loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; continuous thin and moderately thick clay films on faces of peds and lining pores; many very fine and fine tubular pores; 50 percent pebbles, 5 percent cobbles and 5 percent stones; neutral (pH 7.0); abrupt wavy boundary.

R=13 inches; hard, fractured andesite with some clay coats in cracks.

**Type location:** Churchill County, Nevada; approximately 5 miles northeast of Fernley; 2,400 feet south and 2,000 feet east of the northwest corner of section 20, T.21 N., R.25 E.; (39 degrees, 40 minutes, 27 seconds north latitude and 119 degrees, 12 minutes, 00 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* Usually dry summer and fall, moist November through early June.

*Soil temperature:* 47 to 52 degrees, F.

*Depth to bedrock:* 8 to 14 inches to a lithic contact.

#### *Control section:*

Clay content = 18 to 27 percent.

Rock fragments = 35 to 65 percent, mainly angular pebbles with 0 to 30 percent cobbles or stones in the upper part.

Reaction = Slightly acid to mildly alkaline.

#### **A horizon:**

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

Rock fragments = 20 to 65 percent.

#### **Bt horizons:**

Hue = 10YR or 7.5YR.

Value = 4 through 7 dry, 3 or 4 moist.

Chroma = 2 through 4.

Texture = Extremely gravelly loam or extremely gravelly clay loam.

Consistence = Friable or firm moist; slightly sticky or sticky and slightly plastic or plastic, wet.

Clay content = 23 to 30 percent.

Rock fragments = 60 to 75 percent, mainly pebbles.

## Old Camp Series

The Old Camp series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Old Camp soils are on hills and mountains. Slopes are 4 to 75

percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 47 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic  
Lithic Xerollic Haplargids

**Typical pedon:** Old Camp extremely stony loam, 30 to 50 percent slopes, in map unit 301.  
(Colors are for dry soil unless otherwise noted.)  
The soil surface is covered with approximately 20 percent pebbles, 10 percent cobbles, and 15 percent stones.

A=0 to 3 inches; pale brown (10YR 6/3) extremely stony loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; soft, very friable, slightly sticky and nonplastic; few fine roots; common fine and medium tubular pores; 20 percent pebbles, 5 percent cobbles and 25 percent stones; neutral (pH 7.0); clear smooth boundary.

Bt1=3 to 6 inches; brown (10YR 5/3) very cobbly clay loam, dark brown (10YR 4/3) moist; strong fine and medium angular blocky structure; slightly hard, firm, sticky and plastic; few fine roots; common fine, medium and coarse tubular pores; common moderately thick and few thick clay films on faces of peds and lining pores; 20 percent pebbles and 35 percent cobbles; neutral (pH 7.0); abrupt smooth boundary.

Bt2=6 to 11 inches; brown (7.5YR 5/4) very cobbly clay loam, faces of peds brown (7.5YR 4/4) and crushed strong brown (7.5YR 5/6) moist; strong fine and medium angular blocky structure; hard, firm, sticky and plastic; common very fine, fine, medium and coarse roots; common fine and medium tubular pores; common moderately thick and thick clay films on faces of peds and lining pores; 20 percent pebbles and 35 percent cobbles; slightly effervescent; mildly alkaline (pH 7.6); clear wavy boundary.

Btk=11 to 13 inches; light brown (7.5YR 6/4) very cobbly sandy clay loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine and fine tubular pores; 20 percent pebbles and 35 percent cobbles; few thin clay bridges between mineral grains; few thin lime coats on undersides of rock

fragments; slightly effervescent; mildly alkaline (pH 7.8); abrupt wavy boundary.  
2R=13 inches; andesite bedrock.

**Type location:** Churchill County, Nevada; approximately 14.5 miles projected southwest of Frenchman; 400 feet north and 200 feet east of the southwest corner of section 24, T.15 N., R.31 E.; (39 degrees, 08 minutes, 37 seconds north latitude and 118 degrees, 28 minutes, 32 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist November through May.

*Soil temperature:* 47 to 52 degrees, F.

*Depth to bedrock:* 10 to 20 inches to a lithic contact.

#### *Control section:*

Clay content=27 to 35 percent.

Rock fragments=50 to 75 percent, dominantly cobbles and stones. The upper part has 35 to 50 percent rock fragments in some pedons.

#### **A horizon:**

Value=5 through 7 dry, 3 or 4 moist.

Chroma=2 or 3.

Reaction=Neutral or mildly alkaline.

#### **Bt and Btk horizons:**

Hue=10YR or 7.5YR.

Value=4 through 7 dry, 3 through 5 moist.

Chroma=2 through 4.

Texture=Clay loam or sandy clay loam, with subhorizons in some pedons of loam, modified of 50 to 75 percent rock fragments, mainly cobbles and stones.

Consistence=Soft to hard dry, very friable or friable, slightly sticky or sticky and slightly plastic or plastic.

Structure=Weak to strong, coarse to fine angular or subangular blocky.

Reaction=Neutral or mildly alkaline in the upper part, neutral to strongly alkaline in the lower part.

Effervescence=Noneffervescent to strongly effervescent.

Other features=Few to continuous lime coats on rock fragments in the Btk horizon.

## Osobb Series

The Osobb series consists of very shallow and shallow to a duripan, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Osobb soils are on hills and plateaus. Slopes are 8 to 50 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 50 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic, shallow Typic Durorthids

**Typical pedon:** Osobb extremely stony sandy loam, 8 to 30 percent slopes, in map unit 200. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 15 percent pebbles, 15 percent cobbles, and 15 percent stones.

A=0 to 3 inches; pale brown (10YR 6/3) extremely stony sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; few very fine roots; common very fine interstitial pores; 35 percent pebbles, 10 percent cobbles and 30 percent stones; slightly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk=3 to 17 inches; pale brown (10YR 6/3) extremely cobbly fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; few very fine and fine roots; common very fine interstitial and few very fine tubular pores; 35 percent pebbles, 30 percent cobbles, and 5 percent stones; common medium to very coarse lime coats on rock fragments; strongly effervescent; moderately alkaline (pH 8.3); clear wavy boundary.

Bqkm=17 to 18 inches; pinkish white (7.5YR 8/2) indurated duripan, pink (7.5YR 8/4) moist.

R=18 inches; unweathered tuff.

**Type location:** Churchill County, Nevada; approximately 13 miles southwest of Fallon; 160 feet east and 2,440 feet north of the projected southwest corner of section 9, T.17 N., R.27 E.; (39 degrees, 20 minutes, 59 seconds north latitude and 118 degrees, 58 minutes, 03 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Moist in winter and early spring, dry for the remainder of the year.

**Soil temperature:** 53 to 57 degrees, F.

**Depth to indurated duripan:** 8 to 19 inches.

**Depth to bedrock:** 9 to 20 inches to a lithic contact.

**Control section:**

Clay content = 12 to 18 percent.

Rock fragments = 55 to 80 percent, mostly cobbles or stones.

**A horizon:**

Value = 6 through 8 dry, 4 through 6 moist.

Chroma = 2 or 3.

Reaction = Mildly alkaline to strongly alkaline.

Effervescence = Noneffervescent to violently effervescent.

**Bk horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Structure = Subangular blocky or it is massive.

Texture = Loam, fine sandy loam or very fine sandy loam.

Reaction = Moderately alkaline to very strongly alkaline.

## Otomo Series

The Otomo series consists of very shallow and shallow to a duripan, well drained soils that formed in alluvium derived from mixed rocks. Otomo soils are on fan remnants. Slopes are 4 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic, shallow Typic Durorthids

**Typical pedon:** Otomo gravelly sandy loam, 4 to 15 percent slopes, in map unit 537. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles.

A=0 to 3 inches; light gray (10YR 7/2) gravelly sandy loam, brown (10YR 4/3) moist; weak

thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many fine and medium vesicular pores; 25 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

**Bqk** = 3 to 12 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; many very fine interstitial pores; 50 percent pebbles and 5 percent cobbles; common medium silica and lime coats on rocks fragments; strongly effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

**Bqkm** = 12 to 22 inches, white (10YR 8/2) indurated duripan with continuous laminae of silica, brown (10YR 5/3) moist; violently effervescent.

**B'qk** = 22 to 60 inches; light gray (10YR 7/2) very gravelly loamy sand, grayish brown (10YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine, fine and medium interstitial pores; 25 percent weak discontinuous silica cementation; 55 percent pebbles; common medium lime coats on pebbles; violently effervescent; strongly alkaline (pH 8.8).

**Type location:** Churchill County, Nevada; approximately 7 miles north of Brady Hot Springs; 2,300 feet north and 1,800 feet west of the southeast corner of section 1, T.23 N., R.26 E.; (39 degrees, 53 minutes, 19 seconds north latitude and 119 degrees, 00 minutes, 28 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Moist in the winter and spring, dry in summer and fall.

**Soil temperature:** 49 to 52 degrees, F.

**Depth to thick, indurated duripan:** 6 to 14 inches.

**Control section:**

Clay content = 5 to 18 percent.

Rock fragments = 35 to 60 percent.

**A horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 1 through 4.

Rock fragments = 15 to 35 percent.

Reaction = Moderately alkaline through very strongly alkaline; noneffervescent to violently effervescent.

**Bqk horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 to 4.

Rock fragments = 35 to 60 percent.

Reaction = Strongly alkaline or very strongly alkaline.

**B'qk horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 to 4.

Texture (less than 2 millimeter fraction) = Loamy sand or sandy loam.

Rock fragments = 35 to 80 percent.

Reaction = Strongly alkaline or very strongly alkaline.

## Packer Series

The Packer series consist of deep and very deep, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Packer soils are on mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 42 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed Argic Cryoborolls

**Typical pedon:** Packer very cobbly loam, 30 to 75 percent slopes, in map unit 930. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles and 5 percent cobbles.

**A1** = 0 to 4 inches; brown (10YR 5/3) very cobbly loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few very fine tubular pores; 20 percent pebbles and 30 percent cobbles; neutral (pH 7.3); clear smooth boundary.

**A2** = 4 to 10 inches; brown (10YR 5/3) very cobbly loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, very



friable, slightly sticky and slightly plastic; common fine and medium roots; few fine tubular pores; 20 percent pebbles and 30 percent cobbles; neutral (pH 7.3); clear smooth boundary.

**2Bt** = 10 to 16 inches; yellowish brown (10YR 5/4) extremely cobbly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common fine and medium roots; few fine tubular pores; common thin clay films on faces of peds, lining pores and coating rock fragments; 35 percent pebbles and 35 percent cobbles; neutral (pH 7.3); clear smooth boundary.

**2C** = 16 to 42 inches; pale brown (10YR 6/3) extremely cobbly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 35 percent pebbles and 35 percent cobbles; neutral (pH 7.3); clear wavy boundary.

**2R** = 42 inches; hard rhyolitic bedrock.

**Type location:** Churchill County, Nevada; approximately 11.5 miles northwest of Cold Springs; 1,600 feet south and 1,300 feet west of the northeast corner of section 34, T.20 N., R.36 E.; (39 degrees, 33 minutes, 31 seconds north latitude and 117 degrees, 54 minutes, 43 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist winter and spring, dry summer and fall.

**Soil temperature:** 42 to 45 degrees, F.

**Summer soil temperature:** 57 to 59 degrees, F.

**Mollic epipedon thickness:** 7 to 13 inches, includes the upper part of the argillic horizon in some pedons.

**Depth to base of the argillic horizon:** 9 to 21 inches.

**Depth to bedrock:** 40 to more than 60 inches to a lithic contact.

#### Control section:

Clay content = Averages 18 to 30 percent.

Rock fragments = 60 to 80 percent with 25 to 60 percent pebbles, 20 to 40 percent cobbles and up to 10 percent stones.

Other features = Thin BA and BC horizons are present in some pedons.

#### A horizons:

Chroma = 2 or 3.

#### 2Bt horizon:

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 3 or 4.

Texture = Extremely cobbly clay loam, extremely cobbly sandy clay loam or extremely cobbly loam.

Structure = Weak or moderate, very fine to medium, angular or subangular blocky or massive.

Consistence = Slightly hard or hard dry, slightly sticky to very sticky and slightly plastic to very plastic wet.

#### 2C horizon:

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 through 6.

Texture = Extremely cobbly loam, extremely cobbly fine sandy loam, extremely cobbly sandy loam or extremely cobbly loamy sand.

Rock fragments = 25 to 50 percent pebbles, 20 to 35 percent cobbles, and up to 10 percent stones.

Consistence = Soft to very hard, dry; very friable or friable moist, slightly sticky or sticky and nonplastic to plastic wet.

## Parran Series

The Parran series consists of very deep, somewhat poorly drained soils that formed in lacustrine sediments derived from mixed rocks. Parran soils are on lake plains and lake terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Fine, montmorillonitic, mesic Typic Salorthids

**Typical pedon:** Parran silty clay, 0 to 2 percent slopes, in map unit 171. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 60 percent fine basalt pebbles and tufa fragments.

**Az1** = 0 to 3 inches; light gray (5Y 7/2) silty clay, olive gray (5Y 5/2) moist; moderate medium platy structure; slightly hard, very friable,

slightly sticky and plastic; few fine roots; few very fine vesicular pores; 5 percent fine pebbles; many fine prominent white (2.5Y 8/2) salt crystals; slightly effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.

Az2 = 3 to 4 inches; light olive gray (5Y 6/2) silty clay, olive gray (5Y 4/2) moist, common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; moderate fine granular structure; slightly hard, very friable, sticky and plastic; common fine vesicular pores; 5 percent fine pebbles; many fine prominent white (2.5Y 8/2) salt crystals; slightly effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary.

Az3 = 4 to 8 inches; light olive gray (5Y 6/2) silty clay, olive gray (5Y 4/2) moist; strong medium platy structure; hard, firm, sticky and plastic; few very fine roots; very few fine tubular pores; common fine prominent white (2.5Y 8/2) salt crystals; slightly effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary.

Bz = 8 to 22 inches; pale olive (5Y 6/3) silty clay, olive (5Y 5/3) moist, few fine prominent strong brown (7.5YR 5/6) moist and few fine and medium prominent very dark grayish brown (10YR 3/2) masses of iron accumulation; strong medium platy structure parting to strong coarse angular blocky; very hard, very firm, sticky and plastic; few fine roots; common very fine tubular pores; common fine prominent white (2.5Y 8/2) salt crystals; strongly effervescent; very strongly alkaline (pH 9.6); gradual smooth boundary.

C = 22 to 60 inches; pale olive (5Y 6/3) silty clay, olive (5Y 5/3) moist, few fine prominent strong brown (7.5YR 5/6) and common fine and medium prominent dark yellowish brown (10YR 3/4) masses of iron accumulation; strong medium platy structure parting to strong coarse angular blocky; very hard, very firm, sticky and plastic; strongly effervescent; very strongly alkaline (pH 9.6).

**Type location:** Churchill County, Nevada; approximately 14.5 miles north of Fallon; 280 feet north and 2,080 feet west of the southeast corner of section 15, T.21 N., R.28 E.; (39 degrees, 40 minutes, 54 seconds north latitude and 118 degrees, 49 minutes, 14 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* Saturated above 40 inches by the water table during most years.

*Soil temperature:* 53 to 57 degrees, F.

*Salic horizon:* 6 to 28 inches thick.

#### *Control section:*

Clay content = 35 to 55 percent.

Reaction = Strongly alkaline or very strongly alkaline.

Salt content = 2 to 6 percent salt more soluble in cold water than gypsum.

Gypsum = Small to moderate amounts of gypsum are commonly present in at least some horizons in most pedons.

Depth to redoximorphic features = 10 to 30 inches to redox concentrations of iron.

#### **Az horizons:**

Hue = 10YR through 5Y.

Value = 4 or 5 moist, 6 through 8 dry.

Chroma = 1 through 4.

#### **Bz horizon:**

Hue = 2.5Y or 5Y.

Value = 4 or 5 moist; 6 through 8 dry.

Chroma = 1 through 4.

Texture = Clay, silty clay or silty clay loam.

#### **C horizon:**

Hue = 2.5Y or 5Y.

Value = 4 or 5 moist, 6 through 8 dry.

Chroma = 1 through 4.

Texture = Clay, silty clay, or silty clay loam.

Structure = Angular or subangular blocky, platy or horizon is massive.

Redox concentrations = Common to many, fine to large and are faint, distinct or prominent masses of iron accumulation.

Other features = Thin discontinuous tufa deposits are below 12 inches in some pedons. Ostracods present in some pedons.

## Patna Series

The Patna series consists of very deep, somewhat excessively drained soils that formed in eolian material over lacustrine sediments. Patna soils are on lake terraces. Slopes are 0 to 4 percent. The mean annual precipitation is about 6 inches and

the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Coarse-loamy, mixed, mesic  
Typic Haplargids

**Typical pedon:** Patna sand, 0 to 4 percent slopes, in map unit 1121. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 4 inches; brown (10YR 5/3) sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic; many very fine interstitial pores; neutral (pH 6.8); clear smooth boundary.

A2 = 4 to 7 inches; pale brown (10YR 6/3) sand, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine and common very fine roots; many very fine interstitial pores; neutral (pH 7.0); clear smooth boundary.

Bt1 = 7 to 21 inches; lamellated yellowish brown (10YR 5/4) sandy clay loam and pale brown (10YR 6/3) sandy loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to moderate coarse subangular blocky; soft and slightly hard, very friable, nonsticky and slightly sticky and nonplastic and slightly plastic; many very fine and common fine roots; many very fine interstitial pores; lamellae have continuous thin and moderately thick clay coats and bridges on sand grains and lining pores, interlamellae have many very thin clay coats on sand grains; neutral (pH 7.0); gradual wavy boundary.

Bt2 = 21 to 35 inches; lamellated light yellowish brown (10YR 6/4) sandy loam and pale brown (10YR 6/3) loamy sand, dark yellowish brown (10YR 4/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial pores; lamellae have continuous thin clay bridges and coats on sand grains and lining pores, interlamellae have common very thin clay bridges on sand grains; mildly alkaline (pH 7.6); gradual wavy boundary.

C1 = 35 to 50 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; mildly alkaline (pH 7.6); clear wavy boundary.

C2 = 50 to 60 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 1,800 feet west and 100 feet north of the southeast corner of section 10, T.15 N., R.28 E.; (39 degrees, 10 minutes, 16 seconds north latitude and 118 degrees, 50 minutes, 05 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in winter and spring, dry from summer to mid fall.

**Soil temperature:** 53 to 57 degrees, F.

**Control section:**

Clay content = 10 to 18 percent.

Reaction = Neutral to mildly alkaline in the A and Bt horizons, mildly alkaline or moderately alkaline below.

#### A horizons:

Value = 5 through 7 dry, 3 or 4 moist.

Chroma = 1 through 3.

Reaction = Neutral or mildly alkaline.

#### Bt horizons:

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

Reaction = Neutral or mildly alkaline.

Structure = Subangular blocky or massive.

Consistence = Soft to very hard, dry.

Other features = From 2 to 10 continuous lamellae of sandy loam or sandy clay loam, 5 to 50 millimeters thick comprise the argillic horizon. Lamellae are commonly 1 unit of chroma brighter and contain 1 to 3 percent more clay than the interlamellae areas.

#### C horizons:

Value = 4 through 7 dry, 3 through 5 moist.

Chroma = 2 or 3, may be 4 in upper part.

Texture = Loamy fine sand to coarse sand.

Rock fragments = Usually less than 15 percent but may be up to 35 percent in some pedons.

Other features = Unconformable silty lacustrine sediments occur below 40 inches in some pedons. Some pedons have Ck horizons.  
Reaction = Mildly alkaline or moderately alkaline.

## Phing Series

The Phing series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Phing soils are on fan remnants. Slopes are 4 to 15 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 49 degrees, F.

**Taxonomic class:** Fine, montmorillonitic, mesic Xerollic Paleargids

**Typical pedon:** Phing cobbly sandy loam, 4 to 15 percent slopes, in map unit 1150. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 20 percent pebbles, 30 percent cobbles, and 2 percent stones.

A = 0 to 3 inches; brown (10YR 5/3) cobbly sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 20 percent pebbles and 20 percent cobbles; neutral (pH 7.0); abrupt smooth boundary.

E = 3 to 5 inches; light gray (10YR 7/2) gravelly very fine sandy loam, dark grayish brown (10YR 4/2) moist; weak thick platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; many very fine tubular pores; 25 percent pebbles and 5 percent cobbles; neutral (pH 6.8); abrupt smooth boundary.

Bt1 = 5 to 11 inches; brown (10YR 4/3) clay, dark yellowish brown (10YR 4/4) moist; moderate medium and fine prismatic structure; very hard, firm, very sticky and very plastic; many very fine and few fine and medium roots; common very fine and few fine tubular pores; continuous moderately thick clay films on faces of peds and lining pores; 5 percent pebbles and 3 percent cobbles; mildly alkaline (pH 7.6); clear wavy boundary.

Bt2 = 11 to 16 inches; yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 4/4) moist;

moderate medium angular blocky structure; very hard, firm, very sticky and very plastic; few very fine roots; common very fine and few fine tubular pores; continuous thin and moderately thick clay films on faces of peds and lining pores; 5 percent pebbles; moderately alkaline (pH 8.4); clear wavy boundary.

Bt3 = 16 to 35 inches; brown (10YR 5/3) clay, dark brown (10YR 4/3) moist; moderate medium angular blocky structure; very hard, firm, very sticky and very plastic; few very fine roots; common very fine and few fine tubular pores; common thin and moderately thick clay films on faces of peds and lining pores; moderately alkaline (pH 8.4); gradual wavy boundary.

Bqk = 35 to 60 inches; brown (10YR 5/3) gravelly clay loam, dark brown (10YR 4/3) moist; massive, hard, firm and brittle, sticky and plastic; few very fine tubular pores; 20 percent pebbles; silica-lime coats on pebbles; strongly effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 15 miles north of Fernley; 900 feet west and 2,500 feet south of the northeast corner of section 2, T.22 N., R.25 E.; (39 degrees, 48 minutes, 10 seconds north latitude and 119 degrees, 8 minutes, 10 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Moist in winter and spring; dry from mid June thru October.

**Soil temperature:** 47 to 52 degrees.

**Depth to base of the argillic horizon:** 20 to 48 inches.

**Depth to Bq horizons with secondary silica:** 20 to 48 inches.

**Control section:**

Clay content = 45 to 60 percent.

**A horizon:**

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 through 4.

Reaction = Neutral to moderately alkaline.

**E horizon:**

Value = 6 or 7 dry, 3 or 4 moist.

Chroma = 1 or 2.

Rock fragments = 5 to 30 percent, mainly pebbles.  
 Reaction = Neutral to moderately alkaline.  
 Consistence = Slightly hard or hard, dry; nonsticky or slightly sticky and nonplastic or slightly plastic wet.

**Bt horizons:**

Hue = 10YR or 7.5YR.  
 Value = 4 or 5 dry, 3 or 4 moist.  
 Chroma = 2 through 4 may be 6 in lower part.  
 Rock fragments = Less than 10 percent, mainly pebbles.  
 Structure = Fine medium or coarse prismatic in upper part and medium or coarse angular blocky in lower part.  
 Consistence = Firm or very firm, moist; sticky or very sticky and plastic or very plastic, wet.  
 Reaction = Neutral to moderately alkaline.

**Bqk horizon:**

Hue = 10YR or 7.5YR.  
 Value = 5 through 7 dry, 3 through 5 moist.  
 Chroma = 2 through 4.  
 Texture = Stratified extremely gravelly loamy sand to very gravelly loam.  
 Rock fragments = Averages 50 to 75 percent, dominantly pebbles, some pedons have less.  
 Reaction = Mildly alkaline or moderately alkaline.  
 Cementation = Discontinuous weak silica-lime cementation with thin discontinuous silica laminae usually present.  
 Other features = Bq or Bqk horizons may be present.

## Pickup Series

The Pickup series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Pickup soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 47 degrees, F.

**Taxonomic class:** Clayey-skeletal, montmorillonitic, mesic Aridic Argixerolls

**Typical pedon:** Pickup very stony loam, 30 to 50 percent slopes, in map unit 309. (Colors are for

dry soil unless otherwise noted.) The soil surface is covered with approximately 15 percent pebbles, 2 percent cobbles, and 3 percent stones.

A1 = 0 to 2 inches; grayish brown (10YR 5/2) very stony loam, very dark grayish brown (10YR 3/2) moist; weak thin and medium platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular and few very fine interstitial pores; 30 percent pebbles, 5 percent cobbles and 15 percent stones; neutral (pH 6.8); clear smooth boundary.

A2 = 2 to 10 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, sticky and plastic; many medium and coarse and common fine and few very fine roots; common very fine tubular pores; 35 percent pebbles, 5 percent cobbles, and 10 percent stones; neutral (pH 6.8); clear wavy boundary.

Bt1 = 10 to 18 inches; yellowish brown (10YR 5/4) very gravelly clay, dark yellowish brown (10YR 4/4) moist; strong fine and medium angular blocky structure; hard, friable, very sticky and very plastic; common coarse and few very fine and fine roots; common very fine tubular pores; common moderately thick clay films on faces of peds and lining pores; 35 percent pebbles and 10 percent cobbles; neutral (pH 6.9); clear wavy boundary.

Bt2 = 18 to 36 inches; yellowish brown (10YR 5/4) very gravelly clay, yellowish brown (10YR 5/4) moist; massive; hard, friable, very sticky and very plastic; few very fine and fine roots; common very fine tubular pores; many moderately thick clay films lining pores, many pressure faces; 45 percent pebbles and 10 percent cobbles; neutral (pH 6.6); abrupt wavy boundary.

R = 36 inches; hard fractured rhyolitic tuff.

**Type location:** Churchill County, Nevada; approximately 14.5 miles north of Frenchman; 2.4 miles north of La Plata Site; 1,650 feet east and 2,100 feet south of the projected northwest corner of section 30, T.19 N., R.33 E.; (39 degrees, 28 minutes, 59 seconds north

latitude and 118 degrees, 19 minutes, 28 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Moist in winter and spring, dry in summer and fall.

*Soil temperature:* 47 to 52 degrees, F.

*Depth to bedrock:* 20 to 40 inches to a lithic contact.

#### *Control section:*

Clay content = 40 to 55 percent.

Rock fragments = 35 to 60 percent.

Reaction = Neutral to moderately alkaline.

#### **A horizons:**

Hue = 10YR or 7.5YR.

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3.

#### **Bt1 horizon:**

Hue = 10YR or 7.5YR.

Value = 4 or 5 dry.

Chroma = 2 through 4.

Texture = Very gravelly clay loam or very gravelly clay.

Structure = Prismatic, angular blocky or subangular blocky.

Consistence = Slightly hard or hard, dry; friable or very friable, moist; sticky or very sticky and plastic or very plastic, wet.

Clay content = 35 to 45 percent.

#### **Bt2 horizon:**

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 3 through 5 moist.

Chroma = 3 or 4.

Structure = Prismatic, subangular blocky, or it is massive.

Clay content = 50 to 60 percent.

Reaction = Neutral to moderately alkaline.

## Pineval Series

The Pineval series consists of very deep, well drained soils that formed in alluvium derived from volcanic or mixed rocks. Pineval soils are on fan remnants. Slopes are 0 to 15 percent. The mean

annual precipitation is about 10 inches and the mean annual temperature is about 48 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Durixerollic Haplargids

**Typical pedon:** Pineval gravelly loam, 4 to 15 percent slopes, in map unit 492. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 20 percent pebbles.

A1 = 0 to 2 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine and fine vesicular pores; 25 percent pebbles; neutral (pH 7.2); clear smooth boundary.

A2 = 2 to 5 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine vesicular pores; 25 percent pebbles; neutral (pH 7.2); clear smooth boundary.

Bt1 = 5 to 8 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, sticky and plastic; common very fine and fine roots; many very fine and fine vesicular pores; common moderately thick clay films on faces of peds, lining pores and coating rock fragments; 35 percent pebbles; neutral (pH 7.2); clear smooth boundary.

Bt2 = 8 to 11 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; common very fine and fine roots; common fine tubular pores; common moderately thick clay films on faces of peds, lining pores and coating rock fragments; 30 percent pebbles and 5 percent cobbles; neutral (pH 7.3); clear smooth boundary.

Bt3 = 11 to 17 inches; yellowish brown (10YR 5/4) very gravelly sandy clay loam, dark yellowish

brown (10YR 4/4) moist; moderate fine subangular blocky structure; hard, friable, sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; few thin clay films on faces of peds; 40 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.2); clear smooth boundary.

**Bqk1** = 17 to 25 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, brown (10YR 4/3) moist; massive; very hard, firm and brittle, nonsticky and nonplastic; common very fine and fine roots; few fine tubular pores; common medium and coarse lime coats on rock fragments; continuous brittle matrix; 50 percent pebbles and 15 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

**Bqk2** = 25 to 60 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine tubular pores; 30 percent very hard, firm durinodes; common medium and coarse lime coats on rock fragments; 60 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

**Type location:** Churchill County, Nevada; approximately 3.5 miles north of Cold Springs; 2,300 feet west and 300 feet north of the southeast corner of section 33, T.19 N., R.37 E.; (39 degrees, 27 minutes, 43 seconds north latitude and 117 degrees, 49 minutes, 22 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Moist in winter and spring, dry mid June through October.

**Soil temperature:** 47 to 52 degrees, F.

Reaction = Neutral, through moderately alkaline.

#### A horizons:

Hue = 10YR or 2.5Y.

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

#### Bt horizons:

Value = 5 or 6 dry.

Chroma = 3 or 4.

Texture = Very gravelly loam, very gravelly clay loam, or very gravelly sandy clay loam.

Structure = Subangular blocky or horizon is massive.

Consistence = Soft or slightly hard, dry; plastic or very plastic, wet.

Clay content = 25 to 35 percent.

Rock fragments = 35 to 60 percent, mostly pebbles.

#### Bqk horizons:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture = Stratified very gravelly sandy loam to extremely gravelly sand.

Consistence = Soft to hard dry, very friable to firm moist, nonsticky to slightly sticky and nonplastic to slightly plastic wet.

Rock fragments = 35 to 70 percent, mostly pebbles.

## Pirouette Series

The Pirouette series consists of shallow to a duripan, well drained soils that formed in residuum and colluvium derived from volcanic rocks.

Pirouette soils are hills and plateaus. Slopes are 0 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic, shallow Typic Nadurargids

**Typical pedon:** Pirouette very stony very fine sandy loam, 0 to 8 percent slopes, in map unit 200. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 10 percent pebbles, 15 percent cobbles, and 10 percent stones.

**A1** = 0 to 2 inches; light gray (10YR 7/2) very stony very fine sandy loam, dark grayish brown (10YR 4/2) moist; weak thin platy structure; soft, very friable, slightly sticky and nonplastic; few fine roots; common very fine vesicular and few very fine tubular pores; 20 percent pebbles, 5 percent cobbles and 20 percent stones;

slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

A2 = 2 to 4 inches; light gray (10YR 7/2) very stony loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; few very fine tubular pores; 15 percent pebbles and 20 percent stones; slightly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.

Btn1 = 4 to 7 inches; pale brown (10YR 6/3) very cobbly clay loam, brown (10YR 5/3) moist; weak fine prismatic structure parting to strong fine granular; slightly hard, friable, sticky and plastic; few fine roots; common very fine tubular pores; 20 percent pebbles and 25 percent cobbles; many thin clay films on faces of peds and lining pores; moderately alkaline (pH 8.1); clear smooth boundary.

Btn2 = 7 to 11 inches; pale brown (10YR 6/3) very cobbly clay loam, brown (10YR 4/3) moist; weak medium prismatic structure parting to moderate medium angular blocky; slightly hard, very friable, sticky and plastic; few fine roots; common very fine tubular pores; 15 percent pebbles and 25 percent cobbles; many thin clay films on faces of peds and lining pores; moderately alkaline (pH 8.2); abrupt wavy boundary.

Bqkm = 11 to 12 inches; indurated duripan; massive; abrupt wavy boundary.

R = 12 inches; basalt.

**Type location:** Churchill County, Nevada; approximately 13 miles southwest of Fallon; 2,720 feet south of the projected northwest corner of section 9, T.17 N., R.27 E.; (39 degrees, 21 minutes, 03 seconds north latitude and 118 degrees, 58 minutes, 06 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist in winter and spring, dry May to November.

**Soil temperature:** 52 to 56 degrees, F.

**Depth to base of natric horizon:** 8 to 14 inches.

**Depth to thin duripan:** 11 to 20 inches.

**Depth to bedrock:** 12 to 23 inches to a lithic contact.

#### A horizons:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

#### Btn horizons:

Hue = 10YR, 7.5YR or 5YR.

Value = 5 or 6 dry, 4 through 6 moist.

Chroma = 3 or 4.

Clay content = 28 to 35 percent.

Rock fragments = 35 to 50 percent.

Structure = Dominantly weak or moderate, medium or fine prismatic, but has subangular blocky in the Btn3 horizon that occurs in some pedons.

Thickness = 6 to 10 inches.

Reaction = Moderately alkaline or strongly alkaline.

Salinity (EC) = 2 to 8 mmhos/cm.

Sodicity (SAR) = 13 to 45.

## Puett Series

The Puett series consists of shallow, well drained soils that formed in residuum and colluvium derived from tuffaceous rocks. Puett soils are on pediments, hills, and mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 47 degrees, F.

**Taxonomic class:** Loamy, mixed (calcareous), mesic, shallow Xeric Torriorthents

**Typical pedon:** Puett fine sandy loam, 15 to 30 percent slopes, in map unit 322. (Colors are for dry soil unless otherwise noted.)

A = 0 to 3 inches; light gray (10YR 7/2) fine sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, slightly sticky and nonplastic; few very fine and fine roots; common fine interstitial pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

C1 = 3 to 7 inches; very pale brown (10YR 7/3)



fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; common fine tubular pores; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

C2 = 7 to 11 inches; pale brown (10YR 6/3) fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and nonplastic; many very fine, fine and medium roots; common fine tubular pores; 10 percent pebbles; violently effervescent; strongly alkaline (pH 8.5); abrupt wavy boundary.

Cr = 11 inches; weathered tuff with roots in cracks.

**Type location:** Churchill County, Nevada; approximately 22 miles northeast of Cold Springs; 1,000 feet north and 3,300 feet east of the southwest corner of section 29, T.20 N., R.40 E.; (39 degrees, 34 minutes, 00 seconds north latitude and 117 degrees, 30 minutes, 09 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry; moist in winter and spring, dry summer and fall.

**Soil temperature:** 47 to 52 degrees, F.

**Depth to bedrock:** 10 to 20 inches to a paralithic contact.

#### Control section:

Clay content = 5 to 10 percent.

Rock fragments = Up to 35 percent pebbles.

Reaction = Moderately alkaline or strongly alkaline.

Effervescence = Strongly effervescent or violently effervescent.

#### A horizon:

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

#### C horizons:

Hue = 10YR or 2.5Y.

Value = 6 through 8 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture = Coarse sandy loam, fine sandy loam, or sandy loam.

Structure = Subangular blocky or massive.

Consistence = Soft, to hard, dry; nonsticky or slightly sticky and nonplastic or slightly plastic, wet.

Other features = Some pedons have secondary carbonates as lime coats on rock fragments.

## Ragtown Series

The Ragtown series consists of very deep, moderately well drained soils that formed in lacustrine sediments derived from mixed rocks. Ragtown soils are on lake terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Fine, montmorillonitic (calcareous), mesic Typic Torriorthents

**Typical pedon:** Ragtown loam, 0 to 2 percent slopes, in map unit 281. (Colors are for dry soil unless otherwise noted.)

A = 0 to 6 inches; light gray (10YR 7/2) loam, brown (10YR 5/3) moist; strong medium platy structure; hard, friable, slightly sticky and slightly plastic; few very fine roots; common fine and medium tubular and vesicular pores; 5 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

Bk = 6 to 32 inches; light brownish gray (10YR 6/2) clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, very sticky and very plastic; few very fine tubular pores; common large seams of lime; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

2C = 32 to 60 inches; light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; common medium prominent strong brown (7.5YR 5/6) and reddish brown (2.5YR 5/4) masses of iron accumulation; massive; very hard, very firm, very sticky and very plastic; strongly effervescent; strongly alkaline (pH 8.5).

**Type location:** Churchill County, Nevada; approximately 41 miles northeast of Fallon; 1,500 feet east and 1,900 feet north of the southwest corner of section 32, T.25 N., R.32 E.; (39 degrees, 59 minutes, 27 seconds north

latitude and 118 degrees, 24 minutes, 45 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, intermittently moist for short periods in the winter and spring, dry May through November.

*Soil temperature:* 53 to 57 degrees, F.

*Depth to fine textured materials:* 16 to 32 inches.

#### Control section:

Clay content = Averages 35 to 45 percent with 25 to 35 percent clay in the upper part and more than 35 percent clay in the lower part.

Texture = Stratified silty clay loam, clay loam or sandy clay loam in the upper part and stratified clay, silty clay or silty clay loam in the lower part.

Reaction = Moderately alkaline to very strongly alkaline. Very strongly alkaline reaction usually occurs in strongly saline-sodic phases.

Effervescence = Slightly effervescent to violently effervescent.

#### A horizon:

Hue = 10YR through 5Y.

Value = 5 through 7 dry and 3 through 5 moist.

Chroma = 2 through 4.

#### Bk and C horizon:

Hue = 10YR through 5Y.

Value = 6 or 7 dry and 4 through 6 moist.

Chroma = 2 through 4.

Structure = Platy, subangular blocky, prismatic or horizon is massive.

Consistence = Slightly hard or hard dry, sticky or very sticky and plastic or very plastic wet.

Redoximorphic features = Relict redox concentrations may be present in any subhorizon, but are not diagnostic for the series.

Other features = Horizons with secondary carbonates are present in some pedons. Some pedons have few fine soft masses of gypsum.

## Ravenswood Series

The Ravenswood series consists of moderately deep, well drained soils that formed in residuum

and colluvium derived from volcanic rocks.

Ravenswood soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 42 degrees, F.

**Taxonomic class:** Clayey-skeletal, montmorillonitic, frigid Typic Argixerolls

**Typical pedon:** Ravenswood stony loam, 15 to 50 percent slopes, in map unit 440. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 10 percent pebbles, 5 percent cobbles, and 2 percent stones.

A1 = 0 to 3 inches; grayish brown (10YR 5/2) stony loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; few fine vesicular and interstitial pores; 10 percent pebbles, 10 percent cobbles and 1 percent stones; neutral (pH 7.1); abrupt smooth boundary.

A2 = 3 to 8 inches; grayish brown (10YR 5/2) cobbly loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; 10 percent pebbles and 15 percent cobbles; neutral (pH 7.1); clear smooth boundary.

Bt1 = 8 to 12 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine, fine and medium roots; few fine tubular pores; common moderately thick clay films on faces of peds, lining pores and coating rock fragments; 35 percent pebbles and 5 percent cobbles; neutral (pH 7.2); clear smooth boundary.

Bt2 = 12 to 20 inches; yellowish brown (10YR 5/4) very gravelly clay, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; common moderately thick clay films on faces of peds, lining pores and coating rock fragments; 35 percent pebbles and 5 percent cobbles; neutral (pH 7.2); clear smooth boundary.

Bt3 = 20 to 23 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium angular blocky structure; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; common thin clay films on faces of peds, lining pores and coating rock fragments; 40 percent pebbles and 10 percent cobbles; neutral (pH 7.2); abrupt wavy boundary.

R = 23 inches; hard rhyolite.

**Type location:** Churchill County, Nevada; approximately 29.5 miles northeast of Cold Springs; 600 feet east and 400 feet north of the southwest corner of section 17, T.22 N., R.40 E.; (39 degrees, 46 minutes, 05 seconds north latitude and 117 degrees, 30 minutes, 37 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Moist in winter and spring, dry summer and fall.

**Soil temperature:** 43 to 47 degrees, F., greater than 41 degrees, F. from May through November.

**Mollic epipedon thickness:** 10 to 16 inches and includes the upper part of the argillic horizon.

**Depth to bedrock:** 20 to 40 inches to a lithic contact.

#### Control section:

Clay content = 35 to 50 percent.

Rock fragments = 35 to 60 percent, mainly pebbles and cobbles.

Reaction = Slightly acid to mildly alkaline.

#### A horizons:

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3.

#### Bt horizons:

Hue = 10YR or 7.5YR.

Value = 5 dry in the upper part, 5 or 6 dry in lower part, 3 moist in the upper part, 3 to 5 moist in the lower part.

Chroma = 3 in the upper part, 3 through 6 in the lower part.

Texture = Very gravelly clay loam in the upper part, ranging to very gravelly clay in the lower part.

Structure = Angular blocky, subangular blocky, or prismatic.

Consistence = Slightly hard or hard, dry; friable to firm, moist; slightly sticky to very sticky and slightly plastic to very plastic, wet.

## Rawe Series

The Rawe series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Rawe soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Clayey over loamy-skeletal, montmorillonitic, mesic, Typic Haplargids

**Typical pedon:** Rawe gravelly sandy loam, 2 to 15 percent slopes, in neighboring Lyon County. (Colors are for dry soil unless otherwise noted.)

A = 0 to 1 inch = light gray (10YR 7/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine vesicular pores; 25 percent pebbles; neutral (pH 7.0); abrupt smooth boundary.

Bt1 = 1 to 4 inches; brown (7.5YR 4/3) clay loam, brown (7.5YR 4/3) moist; moderate very fine subangular blocky structure; hard, friable, very sticky and very plastic; many very fine interstitial pores; common thin clay films on faces of peds and lining pores; 10 percent pebbles; neutral (pH 7.0); abrupt smooth boundary.

Bt2 = 4 to 7 inches; brown (7.5YR 4/3) gravelly clay, brown (7.5YR 4/3) moist; strong fine subangular blocky structure; hard, friable, very sticky and very plastic; few medium and fine, and common very fine roots; many fine and very fine tubular pores; common thin and moderately thick clay films on faces of peds and lining pores; common pressure faces; 20 percent pebbles; neutral (pH 7.0); abrupt wavy boundary.

Btk = 7 to 10 inches; brown (7.5YR 4/3) gravelly clay loam, brown (7.5YR 4/3) moist; moderate fine subangular blocky structure; hard, friable, very sticky and very plastic; common very fine and few fine and medium roots; many very fine and fine tubular pores; common thin clay films

on faces of peds and lining pores; 30 percent pebbles; few fine lime coats on rock fragments; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

2Bk1 = 10 to 19 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few fine and medium roots; common very fine and fine tubular pores; 55 percent pebbles; strongly effervescent; very strongly alkaline (pH 9.2); gradual wavy boundary.

2Bk2 = 19 to 60 inches; light brownish gray (10YR 6/2) extremely gravelly coarse sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; very few very fine and micro roots; many very fine and fine interstitial pores; 60 percent pebbles; strongly effervescent; very strongly alkaline (pH 9.6).

**Type location:** Lyon County, Nevada; about one mile north of Mason; 1,100 feet south and 1,300 feet east of the northwest corner of Section 28, T.13 N., R.25 E.

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in winter and spring, dry during summer and fall.

**Soil temperature:** 53 to 59 degrees F.

**Depth to secondary carbonates:** 7 to 12 inches.

**Depth to base of argillic horizon and strongly contrasting horizons:** 10 to 23 inches.

#### Control section:

Clay content = 40 to 50 percent in the upper part and 5 to 8 percent in the lower part.

Rock fragments = 5 to 25 percent in the upper part and 35 to 80 percent in the lower part, fragments are mainly pebbles of mixed lithologies.

#### A horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 1 through 3.

Rock fragments = 0 to 30 percent, mainly pebbles.

Reaction = Neutral to moderately alkaline.

Other features = A desert pavement of pebbles is common on the soil surface.

#### Bt and Btk horizons:

Hue = 7.5YR or 10YR.

Value = 4 through 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Gravelly clay or clay.

Structure = Angular blocky, subangular blocky, or prismatic.

Reaction = Neutral to moderately alkaline.

Calcium carbonate equivalent = Less than 5 percent.

Sodicity (SAR): Less than 13.

Other features: Some pedons have thin subhorizons of clay loam or gravelly clay loam containing 37 to 40 percent clay.

#### 2Bk horizons:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture = Stratified very gravelly sandy loam to extremely gravelly coarse sandy loam, with lenses of very gravelly loamy sand in some pedons.

Calcium carbonate equivalent: 5 to 10 percent, secondary calcium carbonate (lime) commonly coats rock fragments.

## Rebel Series

The Rebel series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Rebel soils are on inset fans and fan skirts. Slopes are 0 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 48 degrees, F.

**Taxonomic class:** Coarse-loamy, mixed, mesic Xerollic Camborthids

**Typical pedon:** Rebel loam, 0 to 2 percent slopes, in map unit 591. (Colors are for dry soil unless otherwise noted.)

A = 0 to 4 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak medium platy structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common fine interstitial and very fine vesicular pores; 5 percent pebbles; mildly alkaline (pH 7.8); clear smooth boundary.  
Bw1 = 4 to 11 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate

medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, fine and medium roots; common fine vesicular pores; 5 percent pebbles; mildly alkaline (pH 7.8); clear smooth boundary.

**Bw2** = 11 to 18 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, fine and medium roots; common fine tubular pores; 5 percent pebbles; moderately alkaline (pH 8.0); clear smooth boundary.

**C1** = 18 to 35 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; many very fine, fine and medium roots; common fine tubular pores; 5 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

**C2** = 35 to 60 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; common fine tubular pores; 5 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 4.5 miles southeast of Eastgate; 2,000 feet east and 200 feet north of the southwest corner of section 17, T.16 N., R.37 E.; (39 degrees, 14 minutes, 40 seconds north latitude and 117 degrees, 50 minutes, 26 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist in winter and spring, dry summer and fall.

**Soil temperature:** 47 to 52 degrees, F.

**Depth to base of cambic:** 15 to 24 inches.

#### Control section:

Clay content = 10 to 18 percent.

Rock fragments = Averages 2 to 15 percent, mainly pebbles.

Sand content = 50 to 80 percent.

Depth to carbonates = 15 to 24 inches.

#### A horizon:

Hue = 2.5Y or 10YR.

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

Reaction = Neutral to mildly alkaline.

Effervescence = Slightly effervescent in some pedons due to recharge from calcareous dust.

#### Bw horizons:

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 3 through 5 moist.

Chroma = 2 through 4.

Texture = Fine sandy loam, sandy loam or loam.

Consistence = Soft to slightly hard, dry; friable or very friable, moist; nonsticky or slightly sticky and nonplastic or slightly plastic, wet.

Reaction = Neutral to moderately alkaline.

#### C horizons:

Hue = 10YR or 2.5Y.

Value = 5 through 7 dry, 3 through 5 moist.

Chroma = 2 through 5 dry, 2 through 4 moist.

Texture = Fine sandy loam, sandy loam or loam.

Rock fragments = Some pedons contain strata with up to 50 percent pebbles.

Structure = Subangular blocky or massive.

Consistence = Soft or slightly hard, dry; nonsticky or slightly sticky and nonplastic or slightly plastic, wet.

Effervescence = Slightly effervescent to violently effervescent.

Reaction = Mildly alkaline to strongly alkaline.

Other features = Subhorizons with coarse sandy loam are common in some pedons.

## Rednik Series

The Rednik series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Rednik soils are on fan remnants. Slopes are 2 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 49 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Typic Haplargids

**Typical pedon:** Rednik very gravelly sandy loam, 4 to 8 percent slopes, in map unit 310.

**A1** = 0 to 3 inches; light gray (10YR 7/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common

fine and medium vesicular pores; 35 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2 = 3 to 5 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common very fine, fine and medium roots; common fine interstitial pores; 35 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Btn1 = 5 to 9 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine and medium roots; common very fine and fine tubular pores; few thin clay films on faces of peds, coating rock fragments, and lining pores; 40 percent pebbles and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Btn2 = 9 to 16 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine, fine and medium roots; few fine tubular pores; common moderately thick clay films on faces of peds, coating rock fragments, and lining pores; 50 percent pebbles; strongly effervescent; moderately alkaline (pH 8.1); clear smooth boundary.

Bk1 = 16 to 21 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine and medium roots; few fine tubular pores; 50 percent pebbles and 5 percent cobbles; few fine and medium lime coats on rock fragments; strongly effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

Bk2 = 21 to 28 inches; pale brown (10YR 6/3) very gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 50 percent pebbles; few fine and medium lime coats on rock fragments; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bk3 = 28 to 60 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, dark

yellowish brown (10YR 4/4) moist; massive, soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 50 percent pebbles; few fine lime coats on rock fragments; strongly effervescent; strongly alkaline (pH 8.6).

**Type location:** Churchill County, Nevada; approximately 19 miles northeast of Frenchman; 300 feet east and 200 feet south of the northwest corner of section 9, T.19 N., R.34 E.; (39 degrees, 32 minutes, 01 seconds north latitude and 118 degrees, 10 minutes, 03 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry; moist for short periods in the winter and spring dry from summer to mid fall.

*Soil temperature:* 47 to 54 degrees, F.

*Depth to base of the argillic horizon:* 15 to 30 inches.

#### *Control section:*

Clay content = 18 to 27 percent, when mixed.

Rock fragments = 35 to 75 percent, mainly pebbles.

#### **A horizons:**

Hue = 2.5Y or 10YR.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Reaction = Mildly alkaline to strongly alkaline.

#### **Btn horizons:**

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4 dry or moist.

Texture = (Less than 2 mm fraction) Sandy clay loam, sandy loam, or loam.

Structure = Moderate or strong, medium or fine, angular or subangular blocky structure.

Reaction = Moderately alkaline or strongly alkaline.

Sodicity (SAR) = 13 to 30.

Effervescence = Strongly effervescent or violently effervescent.

#### **Bk and C horizons:**

Hue = 10YR or 7.5YR.

Value = 6 through 8 dry, and 4 through 6 moist.

Chroma = 2 through 4.

Texture = (Less than 2 mm fraction) Fine sandy loam, sandy loam, loamy sand, sand, or loamy coarse sand.

Rock fragments = 35 to 75 percent, mainly pebbles.

Reaction = Strongly alkaline or very strongly alkaline.

Sodicity (SAR) = 5 to 30.

Effervescence = Strongly effervescent or violently effervescent.

## Reluctan Series

The Reluctan series consists of moderately deep, well-drained soils that formed in residuum and colluvium derived from volcanic rocks. Reluctan soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 44 degrees, F.

**Taxonomic class:** Fine-loamy, mixed, frigid Aridic Argixerolls

**Typical pedon:** Reluctan very gravelly loam, 15 to 30 percent slopes, in map unit 761. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles and 10 percent cobbles.

A1 = 0 to 3 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few fine tubular and interstitial pores; 30 percent pebbles and 15 percent cobbles; mildly alkaline (pH 7.8); clear smooth boundary.

A2 = 3 to 9 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; 35 percent pebbles; mildly alkaline (pH 7.8); clear smooth boundary.

Bt1 = 9 to 15 inches; yellowish brown (10YR 5/4) gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common fine and medium roots; few fine tubular pores; 15 percent pebbles; few thin

clay films on faces of peds, lining pores and coating rock fragments; mildly alkaline (pH 7.8); clear smooth boundary.

Bt2 = 15 to 25 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common fine roots; few fine tubular pores; 20 percent pebbles; common moderately thick clay films on faces of peds, lining pores, and coating rock fragments; mildly alkaline (pH 7.8); abrupt wavy boundary.

R = -25 inches; hard rhyolite.

**Type location:** Churchill County, Nevada; approximately 45 miles northeast of Cold Springs; 2,100 feet east and 200 feet north of the southwest corner of section 25, T.25 N., R.39 E.; (39 degrees, 59 minutes, 56 seconds north latitude and 117 degrees, 32 minutes, 36 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Moist in winter and spring, dry from July to October.

**Soil temperature:** 44 to 47 degrees, F.

**Mollic epipedon thickness:** 7 to 17 inches, which includes part of the argillic horizon in some pedons.

**Solum thickness:** 20 to 40 inches.

**Depth to bedrock:** 20 to 40 inches to a lithic contact.

### A horizons:

Value = 4 or 5 dry.

Chroma = 2 or 3.

Reaction = Neutral or mildly alkaline.

### Bt horizon:

Value = 4 through 6 dry, 3 through 5 moist.

Chroma = 2 through 4.

Texture = Gravelly loam or gravelly clay loam.

Clay content = 25 to 35 percent.

Rock fragments = 15 to 35 percent, mainly pebbles.

Consistence = Very friable to firm, moist; slightly sticky or sticky and slightly plastic or plastic, wet.

Reaction = Neutral or mildly alkaline, usually increasing with depth.

## Rezave Series

The Rezave series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Rezave soils are on hills and mountains. Slopes are 4 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees, F.

**Taxonomic class:** Clayey, montmorillonitic, mesic Lithic Natrargids

**Typical pedon:** Rezave very stony fine sandy loam, 4 to 15 percent slopes, in map unit 152. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles, 10 percent cobbles, and 5 percent stones.

A=0 to 3 inches; pale brown (10YR 6/3) very stony fine sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; few very fine, fine, medium and coarse roots; common fine and medium tubular and few fine interstitial and vesicular pores; 5 percent pebbles and 10 percent stones; mildly alkaline (pH 7.6); abrupt smooth boundary.

Btn1=3 to 9 inches; brown (7.5YR 5/4) clay, dark brown (7.5YR 4/4) moist; strong fine and medium prismatic structure parting to strong fine angular blocky; hard, friable, very sticky and very plastic; common very fine and few fine, medium and coarse roots; common fine and medium tubular pores; many thick clay films on faces of peds and lining pores; 5 percent pebbles and 5 percent cobbles; slightly effervescent; strongly alkaline (pH 8.5); abrupt smooth boundary.

Btn2=9 to 15 inches; strong brown (7.5YR 5/6) gravelly clay, strong brown (7.5YR 4/6) moist; moderate medium prismatic structure parting to strong fine angular blocky; hard, friable, very sticky and very plastic; common fine roots; common fine tubular pores; many moderately thick clay films on faces of peds and lining pores; 20 percent pebbles and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

R=15 inches; unweathered ash-flow tuff.

**Type location:** Churchill County, Nevada; approximately 13.5 miles southwest of Frenchman; 700 feet west and 600 feet north of the projected southeast corner of section 24, T.15 N., R.31 E.; (39 degrees, 08 minutes, 38 seconds north latitude and 118 degrees, 27 minutes, 38 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in winter and spring; dry early June through October.

**Soil temperature:** 51 to 56 degrees, F.

**Depth to bedrock:** 14 to 20 inches to a lithic contact.

Other features=Some pedons have a thin E horizon between the A and Btn horizons.

Rock fragments=10 to 50 percent.

### A horizon:

Value=6 or 7 dry, 3 or 4 moist.

Chroma=2 through 4.

Reaction=Neutral to moderately alkaline.

### Btn horizon:

Hue=7.5YR or 10YR.

Value=4 through 6 dry, 3 or 4 moist.

Chroma=3 through 6.

Texture=Clay, clay loam, stony clay.

Clay content=35 to 55 percent.

Structure=Prismatic or angular blocky.

Consistence=Sticky or very sticky and plastic or very plastic, wet.

Carbonates=Slightly through violently effervescent; undersides of rock fragments commonly coated with lime.

Reaction=Moderately alkaline or strongly alkaline.

Sodicity (SAR)=13 to 30.

## Ricert Series

The Ricert series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Ricert soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 48 degrees, F.



**Taxonomic class:** Fine-loamy, mixed, mesic Duric Natrargids

**Typical pedon:** Ricert gravelly loam, 2 to 4 percent slopes, in map unit 350. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 20 percent pebbles.

A1 = 0 to 4 inches; pale brown (10YR 6/3) gravelly loam, dark brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine interstitial and tubular pores; 30 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

A2 = 4 to 8 inches; light brownish gray (10YR 6/2) gravelly loam, brown (10YR 4/3) moist; moderate thin and medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine and fine interstitial and tubular pores; 30 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Btn = 8 to 18 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium prismatic structure; slightly hard, friable, sticky and plastic; common fine and medium roots; few fine tubular pores; common moderately thick clay films on faces of peds, lining pores, and coating rock fragments; 10 percent pebbles; strongly alkaline (pH 8.8); clear smooth boundary.

Bqk1 = 18 to 26 inches; light yellowish brown (10YR 6/4) loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine and medium roots; few fine tubular pores; 10 percent pebbles; few lime coats on the undersides of rock fragments; slightly effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

2Bqk2 = 26 to 37 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft to very hard, very friable to firm, nonsticky and nonplastic; few fine roots in pockets; few fine tubular pores; 25 percent durinodes; 40 percent pebbles and 10 percent cobbles; discontinuous brittle matrix; few lime coats on the undersides of rock fragments; slightly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

2Bqk3 = 37 to 40 inches; light gray (10YR 7/2) very gravelly loamy sand, light brownish gray (10YR 6/2) moist; massive; hard, firm and brittle, nonsticky, nonplastic; 40 percent pebbles and 10 percent cobbles; continuous brittle matrix; few lime coats on the undersides of rock fragments; slightly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

2Bk = 40 to 60 inches; variegated; extremely gravelly loamy sand; massive; soft, very friable, nonsticky and nonplastic; 60 percent pebbles and 10 percent cobbles; few lime coats on the undersides of rock fragments; slightly effervescent; strongly alkaline (pH 8.5).

**Type location:** Churchill County, Nevada; approximately 8.5 miles northeast of Cold Springs; 50 feet west and 1,000 feet north of the projected southeast corner of section 19, T.19 N., R.38 E.; (39 degrees, 29 minutes, 34 seconds north latitude and 117 degrees, 44 minutes, 17 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist in winter and spring, dry mid May through November.

*Soil temperature:* 47 to 52 degrees, F.

*Depth to base of natric horizon:* 14 to 25 inches.

*Control section:*

Clay content = 25 to 35 percent.

Rock fragments = 0 to 10 percent, mainly pebbles.

#### A horizons:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

#### Btn horizon:

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 through 6.

Texture = Loam or clay loam.

Reaction = Strongly alkaline or very strongly alkaline.

Sodicity (SAR) = 13 to 45 percent.

Consistence = Slightly hard to hard, slightly sticky to sticky and slightly plastic to plastic.

#### Bqk horizons:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 3 through 6.

Texture = Loam, silt loam, clay loam.

Reaction = Strongly alkaline or very strongly alkaline.

Silica cementation = Some pedons have continuous brittle matrix firm consistence when moist, discontinuous cemented lenses, or up to 30 percent durinodes.

#### **2Bqk and 2Bk horizons:**

Value = 6 or 7 dry, 4 through 6 moist.

Chroma = 2 through 4.

Texture = Very gravelly sandy loam, very gravelly loamy sand or extremely gravelly loamy sand; some pedons have subhorizons with coarse sand.

Rock fragments = 35 to 70 percent, mainly pebbles.

Reaction = Strongly alkaline or very strongly alkaline.

Consistence = Soft to very hard, very friable to firm, nonplastic or slightly plastic.

Silica cementation = Discontinuous brittle matrix, continuous brittle matrix with firm consistence when moist, or up to 30 percent durinodes are present in 2Bqk horizons.

## **Roca Series**

The Roca series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Roca soils are on hills and mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 43 degrees, F.

**Taxonomic class:** Clayey-skeletal, montmorillonitic, frigid Xerollic Haplargids

**Typical pedon:** Roca very stony loam, 30 to 75 percent slopes, in map unit 840. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 5 percent pebbles, 10 percent cobbles, and 10 percent stones.

A1 = 0 to 2 inches; brown (10YR 5/3) very stony loam, dark brown (10YR 3/3) moist; weak thin and medium platy structure; soft, very friable, slightly sticky and slightly plastic; many very

fine roots; few fine and common very fine tubular pores; 5 percent pebbles, 20 percent cobbles and 30 percent stones; neutral (pH 6.8); clear smooth boundary.

A2 = 2 to 6 inches; brown (10YR 5/3) extremely cobbly loam, dark brown (10YR 3/3) moist; moderate thin and medium platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine tubular pores; 30 percent pebbles and 30 percent cobbles; neutral (pH 6.8); clear smooth boundary.

Bt1 = 6 to 16 inches; pale brown (10YR 6/3) very gravelly clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, very friable, sticky and plastic; few very fine and fine roots; common very fine tubular pores; common moderately thick clay films on faces of peds; 40 percent pebbles; neutral (pH 6.6); clear smooth boundary.

Bt2 = 16 to 25 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; strong fine and medium subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; common very fine tubular pores; many moderately thick clay films on faces of peds; 50 percent pebbles; neutral (pH 6.6); abrupt irregular boundary.

R = 25 inches; hard fractured rhyolite.

**Type location:** Churchill County, Nevada; approximately 1.5 mile southwest of Job Peak; 1,250 feet west and 1,800 feet north of the projected southeast corner of section 22, T.20 N., R.33 E.; (39 degrees, 34 minutes, 50 seconds north latitude and 118 degrees, 15 minutes, 40 seconds west longitude.)

#### **Range in Characteristics:**

**Soil moisture:** Usually dry, moist winter and spring, dry late June through early October.

**Soil temperature:** 43 to 47 degrees, F.

**Depth to bedrock:** 20 to 40 inches to a lithic contact.

#### **A horizons:**

Hue = 10YR or 2.5Y.

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

Reaction = Slightly acid to mildly alkaline.

**Bt horizons:**

Hue = 10YR or 7.5YR; 2.5Y is common in lower subhorizons of some pedons.

Value = 5 through 7 dry, 3 through 7 moist.

Chroma = 3 through 6.

Texture = Very gravelly clay, very gravelly clay loam, or very cobbly clay.

Clay content = 35 to 50 percent.

Rock fragments = 35 to 50 percent.

Structure = Moderate or strong, medium or fine angular blocky or subangular blocky.

Consistence = Slightly hard to very hard, dry; very friable to firm, moist; sticky or very sticky and plastic or very plastic, wet.

Reaction = Neutral to moderately alkaline, usually increasing with depth.

Other features = Some pedons have secondary carbonates and are violently effervescent in the lower subhorizons above the bedrock.

and coarse roots; many very fine and fine vesicular and many very fine interstitial pores; strongly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

2Cr = 6 inches; soft platy tuffaceous sandstone with roots in cracks in the upper 6 to 12 inches.

**Type location:** Churchill County, Nevada; approximately 1,600 feet west and 1,800 feet north of the southeast corner of section 14, T.23 N., R.27 E.; (39 degrees, 51 minutes, 31 seconds north latitude and 118 degrees, 54 minutes, 52 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry, moist in some part for short periods during winter and early spring months and for 10 to 20 days cumulative between July and October due to convection storms.

*Soil temperature:* 53 to 57 degrees, F.

*Depth to bedrock:* 4 to 14 inches to a paralithic contact.

**Control section:**

Clay content = Averages 8 to 18 percent.

Effervescence = Noneffervescent to strongly effervescent.

Reaction = Moderately alkaline or strongly alkaline.

Other features = The bedrock is very firm or extremely firm, has a hardness of less than 3, and may be dug with difficulty with a spade when moist.

**C horizon:**

Hue = 7.5YR through 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Structure = Platy or massive.

Consistence = Soft or slightly hard, dry; nonsticky to slightly sticky and nonplastic or slightly plastic, wet.

Texture = Fine sandy loam, very fine sandy loam, sandy loam or loam.

**Ruhe Series**

The Ruhe series consists of shallow, well drained soils that formed in eolian sand and alluvium

**Roic Series**

The Roic series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium from sedimentary rocks. Roic soils are on hills. Slopes are 2 to 30 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Loamy, mixed (calcareous), mesic, shallow Typic Torriorthents

**Typical pedon:** Roic gravelly sandy loam, 4 to 15 percent slopes, in map unit 1140. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 50 percent pebbles and 5 percent cobbles.

A = 0 to 1 inch; light brownish gray (10YR 6/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; many very fine interstitial pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

2C = 1 to 6 inches; light gray (10YR 7/2) loam, brown (10YR 4/3) moist; weak thin platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine, medium

derived from mixed rocks. Ruhe soils are on lake terraces and beach terraces. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 51 degrees, F.

**Taxonomic class:** Mixed, mesic, shallow Typic Torripsamments

**Typical pedon:** Ruhe gravelly loamy sand, 2 to 8 percent slopes, in map unit 142. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 20 percent tufa pebbles.

A1=0 to 4 inches; very pale brown (10YR 7/3) gravelly loamy sand, pale brown (10YR 6/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine interstitial and few fine tubular pores; 15 percent tufa pebbles; violently effervescent; moderately alkaline (pH 8.3); clear smooth boundary.

A2=4 to 11 inches; light gray (10YR 7/2) loamy sand, brown (10YR 5/3) moist; single grain, loose, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial and common very fine tubular pores; 10 percent tufa pebbles; violently effervescent; moderately alkaline (pH 8.3); clear smooth boundary.

Ck=11 to 18 inches; very pale brown (10YR 7/3) loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine interstitial and few very fine tubular pores; 10 percent tufa pebbles; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary.

2Cr=18 to 28 inches; highly weathered tufa bedrock with very pale brown (10YR 7/3) loamy fine sand in pockets in the rocks, brown (10YR 5/3) moist; soft, very friable, nonsticky and nonplastic; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

3C'k1=28 to 43 inches; very pale brown (10YR 7/3) gravelly sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; 5 percent cobbles and 20

percent tufa pebbles; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

3C'k2=43 to 50 inches; very pale brown (10YR 7/3) extremely gravelly sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; few fine lime filaments; 60 percent tufa pebbles; violently effervescent; very strongly alkaline (pH 9.2); clear smooth boundary.

3C'k3=50 to 60 inches; light gray (2.5Y 7/2) gravelly sand, grayish brown (2.5Y 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; 30 percent pebbles; few fine lime filaments; violently effervescent; strongly alkaline (pH 8.8).

**Type location:** Churchill County, Nevada; approximately 17.5 miles south of Fallon; 700 feet east and 100 feet south of the projected northwest corner of section 26, T.16 N., R.29 E.; (39 degrees, 13 minutes, 36 seconds north latitude and 118 degrees, 42 minutes, 15 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually dry, moist for short periods in winter and spring.

*Soil temperature:* 53 to 59 degrees, F.

*Depth to bedrock:* 14 to 20 inches to a paralithic contact of tufa.

#### *Control section:*

Clay content: 0 to 5 percent.

Rock fragments=5 to 35 percent, some of which are fragments of tufa.

#### **A horizon:**

Value=6 or 7 dry, 4 or 5 moist.

Chroma=2 or 3.

Reaction=Moderately alkaline or strongly alkaline.

Other features=Part of pebbles and sand is tufa fragments.

#### **Ck horizon:**

Value=6 or 7 dry, 4 or 5 moist.

Chroma=2 or 3.

Texture=Loamy sand or sand.

Rock fragments = 5 to 35 percent.  
 Structure = Single grain or massive.  
 Consistence = Soft or loose.

**2Cr layer:**

Other features = Tufa layer 10 to 40 inches thick with fractures that contains some roots and soil.

**3C'k horizons:**

Texture = Stratified extremely cobbly coarse sand to sand.  
 Reaction = Moderately alkaline to very strongly alkaline.

## Rustigate Series

The Rustigate series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed rocks. Rustigate soils are on lake terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 54 degrees, F.

**Taxonomic class:** Fine-loamy, mixed (calcareous), mesic Oxyaquic Torriorthents

**Typical pedon:** Rustigate silt loam, 0 to 2 percent slopes, in map unit 500. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 3 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; moderate medium platy structure; soft, very friable, sticky and slightly plastic; common very fine roots; violently effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

A2 = 3 to 10 inches; very pale brown (10YR 7/3) silt loam, yellowish brown (10YR 5/4) moist; weak thin platy structure parting to moderate medium granular; soft, very friable, slightly sticky and slightly plastic; common very fine roots; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C1 = 10 to 20 inches; very pale brown (10YR 7/3) loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

C2 = 20 to 33 inches; very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; massive; hard, firm, slightly sticky and slightly plastic; common very fine and fine roots; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C3 = 33 to 40 inches; very pale brown (10YR 7/3) sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and nonplastic; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

C4 = 40 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; violently effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada, Dixie Valley; approximately 1,900 feet south and 400 feet west of the northeast corner of section 21, T.21 N., R.35 E.; (39 degrees, 40 minutes, 28 seconds north latitude and 118 degrees, 02 minutes, 38 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist in some part for short periods during winter and early spring, and for 10 to 20 days cumulative between July to October due to convection storms.

**Water table:** Fluctuates between 36 to 60 inches in winter, spring and early summer.

**Soil temperature:** 53 to 59 degrees, F.

**Control section:**

Clay content = Averages 18 to 27 percent.

Effervescence = Slightly effervescent to violently effervescent.

Reaction = Moderately alkaline to very strongly alkaline.

**A horizons:**

Value = 6 through 8 dry, 3 through 6 moist.

Chroma = 2 through 4.

**C horizons:**

Value = 6 through 8 dry, 3 through 5 moist.

Chroma = 2 through 4.

Texture = Loam or sandy loam.

Consistence = Soft to hard, very friable to firm, nonsticky to slightly sticky and nonplastic to slightly plastic.

## Settlement Series

The Settlement series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rocks. Settlement soils are on lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 54 degrees, F.

**Taxonomic class:** Fine, montmorillonitic (calcareous), mesic Aeric Halaquepts

**Typical pedon:** Settlement silty clay loam, 0 to 2 percent slopes, in map unit 331. (Colors are for dry soil unless otherwise noted.)

A=0 to 4 inches; very pale brown (10YR 8/3) silty clay loam, brown (10YR 5/3) moist; weak thin platy structure; slightly hard, very friable, sticky and plastic; few very fine roots; many fine vesicular pores; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bw=4 to 6 inches; very pale brown (10YR 8/3) clay, brown (10YR 5/3) moist; strong very fine and fine subangular blocky structure; slightly hard, very friable, sticky and plastic; few very fine roots; few very fine tubular pores; violently effervescent; very strongly alkaline (pH 9.2); abrupt smooth boundary.

Bk1=6 to 12 inches; very pale brown (10YR 7/3) clay, yellowish brown (10YR 5/4) moist; strong fine angular blocky structure; hard, friable, very sticky and very plastic; few very fine, fine, medium and coarse roots; common very fine tubular pores; many large lime nodules and soft masses; violently effervescent; strongly alkaline (pH 8.9); clear smooth boundary.

Bk2=12 to 24 inches; very pale brown (10YR 7/3) clay, brown (10YR 5/3) moist; few fine prominent black (10YR 2/1) masses of manganese accumulation on faces of peds; weak coarse prismatic structure; hard, firm, very sticky and very plastic; few very fine, fine and medium roots; few fine tubular pores; few large lime nodules and soft masses; violently effervescent; strongly alkaline (pH 8.6); clear irregular boundary.

Bk3=24 to 60 inches; very pale brown (10YR 7/3) silty clay, brown (10YR 5/3) moist; common

fine prominent black (10YR 2/1) moist mottles on faces of peds; weak coarse prismatic structure; hard, firm, very sticky and very plastic; few fine and medium tubular pores; many fine lime nodules and soft masses; violently effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada, Dixie Valley; approximately 2,000 feet north and 2,600 feet west of the southeast corner of section 7, T.21 N., R.35 E.; (39 degrees, 41 minutes, 58 seconds north latitude and 118 degrees, 05 minutes, 18 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Saturated at or near the surface in late winter and early spring, usually dry in summer and fall.

**Water table:** 12 to 36 inches during late winter and early spring, and drops below 5 feet in late summer and fall.

**Soil temperature:** 53 to 59 degrees, F.

**Depth to Bk horizon:** 5 to 18 inches.

### Control section:

Clay content = Averages 45 to 60 percent.

Effervescence = Slightly effervescent or violently effervescent.

Other features = Buried A horizons and C horizons are in the lower part of some pedons.

### A horizon:

Value = 6 through 8 dry, 5 or 6 moist.

Chroma = 2 through 4.

Consistence = Slightly hard or hard, dry; very friable through firm, moist.

Reaction = Moderately alkaline or strongly alkaline.

### Bw horizon:

Hue = 10YR or 7.5YR.

Value = 5 through 8 dry, 4 through 6 moist.

Chroma = 2 through 4.

Structure = Weak to strong subangular blocky or prismatic.

Reaction = Strongly alkaline or very strongly alkaline.

Sodicity (SAR) = 13 to 30.

**Bk horizons:**

Hue = 10YR or 7.5YR.

Value = 5 through 8 dry, 4 through 6 moist.

Chroma = 1 through 4.

Texture = Clay or silty clay; subhorizons of silty clay loam are in some pedons.

Structure = Subangular blocky or prismatic, some Bk horizons are massive.

Reaction = Moderately alkaline to very strongly alkaline.

Sodicity (SAR) = 13 to 30 in the upper part of the Bk horizon and 5 to 12 in the lower part.

## Singatse Series

The Singatse series consists of very shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from volcanic or mixed rocks. Singatse soils are on hills and mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed (calcareous), mesic Lithic Torriorthents

**Typical pedon:** Singatse very gravelly loam, 30 to 50 percent slopes, in map unit 191. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 35 percent pebbles and 10 percent cobbles.

A1 = 0 to 1 inch; light gray (10YR 7/2) very gravelly loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine vesicular pores; 35 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.4); abrupt smooth boundary.

A2 = 1 to 4 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine interstitial pores; 45 percent pebbles and 5 percent cobbles; strongly alkaline (pH 8.6); clear smooth boundary.

C1 = 4 to 6 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist;

massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine interstitial pores; 45 percent pebbles and 5 percent cobbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

C2 = 6 to 10 inches; light gray (10YR 7/2) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; 40 percent pebbles and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

R = 10 inches; hard rhyolite.

**Type location:** Churchill County, Nevada; approximately 4 miles north of Middlegate; 900 feet west of the southeast corner of section 24, T.17 N., R.35 E.; (39 degrees, 19 minutes, 00 seconds north latitude and 117 degrees, 59 minutes, 02 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in winter and spring. Dry in early May through October.

**Soil temperature:** 49 to 54 degrees, F.

**Depth to bedrock:** 4 to 10 inches to a lithic contact.

**Control section:**

Clay content = 5 to 15 percent.

Rock fragments = 35 to 60 percent, mainly pebbles.

Calcium carbonate equivalent = 1 to 10 percent.

Effervescence = Slightly effervescent to strongly effervescent.

Reaction = Moderately alkaline or strongly alkaline.

**A horizons:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

**C horizons:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture = Very gravelly loam or very gravelly sandy loam.

## Slaw Series

The Slaw series consists of very deep, well drained soils that formed in alluvium and lacustrine sediments derived from mixed rocks. Slaw soils are on stream terraces and lake terraces. Slopes are 0 to 4 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Fine-silty, mixed (calcareous), mesic Typic Torrifluvents

**Typical pedon:** Slaw silt loam, 0 to 2 percent slopes, in map unit 341. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 3 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; few fine tubular pores; strongly effervescent; very strongly alkaline (pH 9.2) clear smooth boundary.

A2 = 3 to 9 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; slightly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

C1 = 9 to 14 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine tubular pores; violently effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

C2 = 14 to 25 inches; very pale brown (10YR 7/3) silt loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C3 = 25 to 36 inches; very pale brown (10YR 7/3) silty clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; few fine roots; few fine tubular pores; violently

effervescent; very strongly alkaline (pH 9.2); clear smooth boundary.

C4 = 36 to 50 inches; very pale brown (10YR 7/3) silty clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; few fine roots; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

C5 = 50 to 52 inches; white (10YR 8/2) very fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; soil material is high in volcanic ash; slightly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

C6 = 52 to 62 inches; very pale brown (10YR 7/3) silty clay loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, sticky and plastic; violently effervescent; very strongly alkaline (pH 9.4).

**Type location:** Churchill County, Nevada; Dixie Valley, about 2,400 feet north and 650 feet east of the southwest corner of section 24, T.21 N., R.34 E.; (39 degrees, 40 minutes, 18 seconds north latitude and 118 degrees, 06 minutes, 43 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist in some part for short periods during winter and early spring months and for 10 to 20 days cumulative between July and October due to convection storms.

**Soil temperature:** 53 to 57 degrees, F.

#### Control section:

Clay content = Averages 18 to 35 percent.

Reaction = Strongly alkaline or very strongly alkaline.

Calcium carbonate equivalent = 1 to 4 percent.

Organic matter = Decrease irregularly with depth.

#### A horizons:

Value = 6 or 7 dry, 4 through 6 moist.

Chroma = 2 through 4.

Effervescence = Slightly effervescent to violently effervescent.

#### C horizons:

Hue = 10YR or 2.5Y.

Value = 6 through 8 dry, 4 through 6 moist.



Chroma = 2 through 4.

Texture = Stratified very fine sandy loam to silty clay and averages silty clay loam or silt loam.

Structure = Subangular blocky, platy or is massive.

Consistence = Soft to hard dry, very friable to friable, nonsticky to sticky, nonplastic to plastic.

Other features = Relict redoximorphic features may occur in any subhorizon.

Salinity (EC) = 16 to 32 mmhos/cm.

Sodicity (SAR) = 30 to 99.

## Slocave Series

The Slocave series consists of very shallow and shallow, well drained soils that formed in residuum derived from granitic rocks. Slocave soils are on hills. Slopes are 30 to 50 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed (calcareous), mesic, shallow Typic Torriorthents

**Typical pedon:** Slocave very gravelly coarse sandy loam, 30 to 50 percent slopes, in map unit 1290. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 50 percent pebbles.

A = 0 to 1 inch; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine and common fine interstitial pores; 55 percent fine pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

C = 1 to 5 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine and fine interstitial pores; 50 percent fine pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Cr = 5 to 22 inches; weathered granitic bedrock with a few fine roots in the upper few inches; gradual wavy boundary.

R = 22 inches; hard granitic bedrock.

**Type location:** Churchill County, Nevada; approximately 2,250 feet south and 800 feet east of the northwest corner of section 34, T.25 N., R.29 E.; (39 degrees, 59 minutes, 36 seconds north latitude and 118 degrees, 43 minutes, 00 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in winter and spring, dry from mid-May through November.

**Soil temperature:** 53 to 59 degrees, F.

**Depth to bedrock:** 4 to 14 inches to a paralithic contact. Hard bedrock is within 40 inches.

**Control section:**

Clay content = 6 to 15 percent.

Rock fragments = 35 to 60 percent, mainly fine pebbles.

Effervescence = Slightly effervescent to violently effervescent.

**A horizon:**

Value = 4 or 5 moist.

Chroma = 3 or 4.

**C horizon:**

Value = 4 or 5 moist.

Chroma = 3 or 4.

Texture = Very gravelly sandy loam or very gravelly coarse sandy loam.

Clay content = 6 to 16 percent.

Rock fragments = 35 to 50 percent, mainly fine pebbles.

Consistence = Soft or slightly hard dry.

## Soar Series

The Soar series consists of very shallow and shallow well drained soils that formed in residuum and colluvium derived from granitic rocks. Soar soils are on hills. Slopes are 4 to 30 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 50 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic, shallow Xerollic Haplargids

**Typical pedon:** Soar very gravelly coarse sandy loam, 15 to 30 percent slopes, in map unit 1280. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles and 15 percent cobbles.

A=0 to 2 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine vesicular pores; 45 percent fine pebbles; neutral (pH 7.2); abrupt smooth boundary.

Bt=2 to 10 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine and medium roots; many very fine and fine and few medium tubular and interstitial pores; common thin clay films on faces of peds and lining pores; 35 percent fine pebbles; neutral (pH 6.8); clear wavy boundary.

Cr=10 to 24 inches; fractured, weathered granitic bedrock; common very fine and fine roots in the upper few inches; discontinuous pockets of lime.

R=24 inches; hard granitic bedrock.

**Type location:** Churchill County, Nevada; approximately 2,300 feet west and 4,000 feet north of the southeast corner of section 36, T.25 N., R.25 E.; (39 degrees, 59 minutes, 51 seconds north latitude and 119 degrees, 07 minutes, 18 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist winter and spring, dry June through October.

**Soil temperature:** 47 to 52 degrees, F.

**Depth to bedrock:** 6 to 14 inches to a paralithic contact. Hard bedrock is within 40 inches.

#### Control section:

Clay content = 14 to 22 percent.

Rock fragments = 35 to 50 percent, mainly fine pebbles.

Reaction = Neutral or mildly alkaline.

Other features = The upper 7 inches when mixed, have a value of more than 5.5 dry and 3.5 moist.

#### A horizon:

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

#### Bt horizon:

Hue = 10YR or 7.5YR.

Value = 4 through 6 dry, 3 or 4 moist.

Chroma = 2 through 4.

Texture = Very gravelly sandy clay loam or very gravelly loam.

Clay content = 20 to 26 percent.

Rock fragments = 35 to 60 percent, mainly fine (2 to 5 millimeter) pebbles.

Structure = Subangular blocky or prismatic.

Consistence = Slightly sticky or sticky and slightly plastic or plastic wet.

Other features = Some pedons have thin subhorizons of sandy clay above the paralithic contact.

## Sojur Series

The Sojur series consists of very shallow, well drained soils that formed in residuum derived from metamorphic rocks. Sojur soils are on hills. Slopes are 15 to 30 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 51 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed (calcareous), mesic Lithic Torriorthents

**Typical pedon:** Sojur extremely channery silt loam, 15 to 30 percent slopes, in map unit 1160. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 70 percent channers.

A1=0 to 2 inches; light brownish gray (2.5Y 6/2) extremely channery silt loam, dark grayish brown (10YR 4/2) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine and few medium vesicular pores; 70 percent channers; violently effervescent; strongly alkaline (pH 9.0); abrupt wavy boundary.

A2 = 2 to 5 inches; grayish brown (2.5Y 5/2) extremely channery loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular and vesicular pores; 70 percent channers; violently effervescent; strongly alkaline (pH 9.0); abrupt wavy boundary.

C = 5 to 7 inches; extremely channery loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular and vesicular pores; 80 percent channers; violently effervescent; strongly alkaline (pH 9.0); abrupt irregular boundary.

R = 7 inches; hard fractured phyllite.

**Type location:** Churchill County, Nevada; approximately 33 miles north of Fallon; 2,200 feet north and 200 feet east of the southwest corner of section 32, T.25 N., R.29 E.; (39 degrees, 59 minutes, 27 seconds north latitude and 118 degrees, 45 minutes, 24 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in winter and early spring; dry mid May through November.

**Soil temperature:** 53 to 57 degrees, F.

**Depth to bedrock:** 4 to 10 inches to a lithic contact.

#### Control section:

Clay content = 18 to 25 percent.

Rock fragments = 50 to 75 percent when mixed with the surface rock fragments, mainly channers.

Reaction = Moderately alkaline or strongly alkaline.

Calcium carbonate equivalent = 1 to 10 percent.

Effervescence = Strongly effervescent or violently effervescent.

#### A and C horizons:

Hue = 10YR through 5Y.

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Other features = Some pedons have thin C horizons with greater than 60 percent rock fragments overlying the lithic contact.

## Stewval Series

The Stewval series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks.

Stewval soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 51 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids

**Typical pedon:** Stewval very gravelly fine sandy loam, 15 to 50 percent slopes, in map unit 1010. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 75 percent pebbles.

A = 0 to 3 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; moderate thick platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine and fine vesicular pores; 55 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bt = 3 to 8 inches; light yellowish brown (10YR 6/4) extremely gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate medium and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; common thin clay films lining pores and on faces of peds; 55 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.3); abrupt wavy boundary.

R = 8 inches; hard rhyolite.

**Type location:** Churchill County, Nevada; approximately 1/4 mile east of benchmark 5958, 850 feet north and 4,200 feet east of the southwest corner of section 2, T.14 N., R.35 E.; (39 degrees, 06 minutes, 05 seconds north latitude and 118 degrees, 00 minutes, 10 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist in winter and spring months, dry in summer and fall except

for 10 to 20 days cumulative between July and October due to convection storms.

*Soil temperature:* 53 to 59 degrees, F.

*Depth to bedrock:* 4 to 14 inches to a lithic contact.

**Control section:**

Clay content = Averages 18 to 27 percent.

Rock fragments = 35 to 70 percent pebbles, 0 to 10 percent cobbles, 0 to 15 percent stones. Some pedons have 0 to 5 percent flagstones.

Effervescence = Slightly effervescent to violently effervescent.

Reaction = Mildly alkaline or moderately alkaline.

**A horizon:**

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 2 or 3.

**Bt horizon:**

Hue = 10YR through 5YR.

Value = 5 or 6 dry, 3 through 5 moist.

Chroma = 2 through 4.

Texture (less than 2 millimeter fraction) = Loam or clay loam.

Consistence = Soft or slightly hard.

Other features = Silica and lime pendants are on undersides of rock fragments in some pedons.

## Stumble Series

The Stumble series consists of very deep, somewhat excessively drained soils that formed in eolian sand and alluvium derived from mixed rocks. Stumble soils are on sand sheets. Slopes are 0 to 4 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Mixed, mesic Typic Torripsamments

**Typical pedon:** Stumble loamy sand, 0 to 4 percent slopes, in map unit 220. (Colors are for dry soil unless otherwise noted.)

A = 0 to 4 inches; light gray (10YR 7/2) loamy sand, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; soft, very

friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 10 percent pebbles; mildly alkaline (pH 7.4); clear smooth boundary.

Bw = 4 to 20 inches; light gray (10YR 7/2) loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 5 percent pebbles; moderately alkaline (pH 7.9); gradual smooth boundary.

C = 20 to 60 inches; very pale brown (10YR 7/3) gravelly loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 20 percent pebbles; slightly effervescent; strongly alkaline (pH 8.5).

**Type location:** Churchill County, Nevada; approximately 17.5 miles southwest of Fallon; 1,800 feet west and 1,650 feet south of the northeast corner of section 24, T.16 N., R.27 E.; (39 degrees, 14 minutes, 13 seconds north latitude and 118 degrees, 53 minutes, 45 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* Usually dry, moist in some part for short periods during winter and early spring, and for 10 to 20 day cumulative between July and October due to convection storms.

*Soil temperature:* 53 to 59 degrees, F.

**Control section:**

Rock fragments = 5 to 35 percent, dominantly pebbles in some horizon.

**A horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chromas = 2 or 3.

Reaction = Neutral to moderately alkaline.

**Bw horizon:**

Chroma = 2 or 3.

Texture = Loamy sand or loamy fine sand.

Consistence = Soft or slightly hard, dry.

**C horizon:**

Hue = 10YR or 2.5Y.

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture = Gravelly loamy sand or gravelly loamy fine sand.

Structure = Single grain, subangular blocky or massive.

Reaction = Moderately alkaline or strongly alkaline.

Effervescence = Slightly effervescent to violently effervescent.

## Teguro Series

The Teguro series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Teguro soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 45 degrees, F.

**Taxonomic class:** Loamy, mixed, frigid Lithic Argixerolls

**Typical pedon:** Teguro very stony loam, 30 to 50 percent slopes, in map unit 860. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 15 percent pebbles, 5 percent cobbles, and 3 percent stones.

A1 = 0 to 2 inches; grayish brown (10YR 5/2) very stony loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure parting to weak fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular and few very fine interstitial pores; 15 percent pebbles, 5 percent cobbles and 3 percent stones; neutral (pH 6.8); clear smooth boundary.

A2 = 2 to 6 inches; brown (10YR 5/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; 20 percent pebbles; neutral (pH 6.8); clear smooth boundary.

Bt1 = 6 to 10 inches; brown (10YR 5/3) gravelly clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine, fine, medium and coarse roots; common very fine tubular pores; 30 percent pebbles; common thin and few

moderately thick clay films on faces of peds and lining pores; neutral (pH 6.6); clear smooth boundary.

Bt2 = 10 to 16 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; few very fine, fine, medium and coarse roots; common very fine tubular pores; 20 percent pebbles; common moderately thick and few thin clay films on peds and lining pores; neutral (pH 6.6); abrupt wavy boundary. R = 16 inches; hard unfractured rhyolitic tuff.

**Type location:** Churchill County, Nevada, in the Stillwater Range; approximately 200 feet east and 600 feet south of the projected northwest corner of section 26, T.20 N., R.33 E.; (39 degrees, 34 minutes, 26 seconds north latitude and 118 degrees, 15 minutes, 20 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Moist in winter and spring, and dry mid July through early October.

**Soil temperature:** 43 to 47 degrees, F.

**Mollic epipedon:** 7 to 12 inches thick and includes the upper part of the argillic horizon.

**Depth to bedrock:** 14 to 20 inches to a lithic contact.

**Control section:**

Clay content = 25 to 35 percent.

Rock fragments = 15 to 35 percent, mainly pebbles.

Reaction = Slightly acid or neutral.

**A horizons:**

Value = 4 or 5 dry, 2 or 3 moist.

Chroma = 2 or 3 dry or moist.

**Bt horizons:**

Value = 5 or 6 dry, 3 or 4 moist.

Chroma = 3 or 4 dry and moist.

Texture = Gravelly loam or gravelly clay loam.

## Terlco Series

The Terlco series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Terlco soils are on fan remnants.

Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Fine-loamy, mixed, mesic Typic Natrargids

**Typical pedon:** Terico very gravelly fine sandy loam, 2 to 8 percent slopes, in map unit 1040. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 40 percent pebbles.

A=0 to 5 inches; light gray (10YR 7/2) very gravelly fine sandy loam, grayish brown (10YR 5/2) moist; moderate thick platy structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine vesicular pores; 35 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

B<sub>tn</sub>=5 to 9 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; strong medium and fine prismatic structure; very hard, firm, sticky and plastic; common very fine and few fine roots; common very fine tubular pores; 20 percent pebbles; common moderately thick clay films on faces of peds and lining pores; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

B<sub>tnk</sub>=9 to 13 inches; light yellowish brown (10YR 6/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; weak fine prismatic structure; hard, friable, sticky and plastic; common very fine and few fine roots; common very fine tubular pores; 15 percent pebbles; common thin clay films on faces of peds and lining pores; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

B<sub>k1</sub>=13 to 19 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; common very fine interstitial and few fine tubular pores; 50 percent pebbles; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

B<sub>k2</sub>=19 to 37 inches; light brownish gray (10YR 6/2) very gravelly loamy sand, dark grayish brown (10YR 4/2) moist; massive; soft, very

friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial and few very fine tubular pores; 35 percent pebbles and 5 percent cobbles; violently effervescent; very strongly alkaline (pH 9.4); gradual wavy boundary.

B<sub>k3</sub>=37 to 60 inches; light brownish gray (10YR 6/2) very gravelly loamy sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common fine interstitial and few fine tubular pores; 35 percent pebbles and 15 percent cobbles; violently effervescent; very strongly alkaline (pH 9.4).

**Type location:** Churchill County, Nevada; approximately 14.5 miles south of Frenchman; 1,950 feet north and 1,900 feet west of the southeast corner of section 18, T.14 N., R.33 E.; (39 degrees, 04 minutes, 43 seconds north latitude and 118 degrees, 18 minutes, 04 seconds west longitude.)

#### Range in Characteristics:

**Soil moisture:** Usually dry, moist in some part for short periods during winter and early spring months and for 10 to 20 days cumulative between July and October due to convection storms.

**Soil temperature:** 53 to 59 degrees, F.

**Depth to base of natric horizon:** 10 to 18 inches.

**Control section:**

Clay content = 18 to 35.

Coarse fragments = 15 to 30 percent pebbles.

Effervescence = Slightly effervescent to violently effervescent, major accumulation of carbonates are in bands or pockets in some pedons.

**A horizon:**

Value = 6 through 8 dry, 3 through 6 moist.

Chroma = 2 or 3.

**B<sub>tn</sub> and B<sub>tnk</sub> horizons:**

Value = 5 through 7 dry, 4 through 6 moist.

Chroma = 3 or 4.

Texture (less than 2 mm fraction) = Clay loam, loam, or sandy loam, subhorizons of sandy clay are in some pedons.

Structure = Platy to prismatic may part to angular or subangular blocky.

Consistence = Slightly hard to very hard, dry; very friable to firm, moist; slightly sticky or sticky wet.

Clay content = 18 to 35 percent. Clay content is up to 40 percent in the upper part of the argillic in some pedons.

Sodicity (SAR) = 13 to 30.

#### **Bk1 horizon:**

Value = 5 through 8 dry, 4 through 7 moist.

Chroma = 2 through 4.

Clay content = 8 to 15 percent.

Rock fragments = 35 to 60 percent pebbles, 0 to 25 percent cobbles.

Consistence = Soft to slightly hard, dry; very friable or friable moist.

Sodicity (SAR) = 31 to 45.

#### **Bk2 and Bk3 horizons:**

Value = 5 through 8 dry, 4 through 7 moist.

Chroma = 2 through 4.

Texture (less than 2 mm fraction) = Loamy sand or sand.

Clay content = 3 to 10.

Rock fragments = 35 to 60 percent pebbles, 0 to 20 percent cobbles.

Consistence = Soft to slightly hard, very friable to friable.

Sodicity (SAR) = 31 to 45.

## **Theon Series**

The Theon series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Theon soils are on hills and mountains. Slopes are 8 to 75 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 50 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Lithic Haplargids

**Typical pedon:** Theon very gravelly sandy loam, 15 to 50 percent slopes, in map unit 144. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 60 percent pebbles and 2 percent cobbles.

A = 0 to 3 inches; light gray (10YR 7/2) very gravelly sandy loam, grayish brown (10YR 5/2)

moist; strong thick platy structure; slightly hard, very friable, slightly sticky and nonplastic; no roots; many very fine and fine vesicular pores; 40 percent pebbles and 5 percent cobbles; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bt1 = 3 to 10 inches; pale brown (10YR 6/3) very gravelly clay loam, brown (10YR 5/3) moist; strong very fine and fine angular blocky structure; slightly hard, very friable, sticky and slightly plastic; very few fine roots; many very fine interstitial pores; 40 percent pebbles and 10 percent cobbles; many thin clay films on faces of peds and lining pores; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bt2 = 10 to 12 inches; reddish brown (5YR 4/3) very gravelly clay loam, reddish brown (5YR 4/3) moist; strong very fine and fine angular blocky structure; hard, firm, sticky and plastic; very few fine roots; many very fine interstitial pores; 40 percent pebbles and 10 percent cobbles; many moderately thick clay films on faces of peds and lining pores; mildly alkaline (pH 7.4); clear wavy boundary.

R = 12 inches; hard rhyolite fractured and weathered in the upper 1 to 4 inches.

**Type location:** Churchill County, Nevada; approximately 13 miles southwest of Fallon; 600 feet west and 1,000 feet south of the projected northeast corner of section 8, T.17 N., R.27 E.; (39 degrees, 21 minutes, 21 seconds north latitude and 118 degrees, 58 minutes, 14 seconds west longitude.)

#### **Range in Characteristics:**

**Soil moisture:** Usually dry, moist for short periods in winter and spring, dry late May through November.

**Soil temperature:** 53 to 59 degrees, F.

**Depth to base of argillic horizon:** 8 to 14 inches.

**Depth to bedrock:** 8 to 14 inches to a lithic contact.

#### **Control section:**

Clay content = 25 to 35 percent.

Rock fragments = 35 to 60 percent, mainly pebbles.

Other features = Some pedons have discontinuous thin coats of clay, silica, or silica and lime along weak fracture planes in the bedrock.

**A horizon:**

Value = 5 through 7 dry, 3 through 5 moist.  
 Chroma = 2 through 4.  
 Reaction = Neutral to moderately alkaline.  
 Effervescence = Slightly effervescent due to recharge from calcareous dust in some pedons.

**Bt horizons:**

Hue = 10YR through 5YR.  
 Value = 4 through 7 dry; 3 through 5 moist.  
 Chroma = 3 or 4.  
 Texture = Very gravelly clay loam, very gravelly sandy clay loam, or very gravelly loam.  
 Subhorizons of some pedons are extremely gravelly.  
 Structure = Angular blocky or subangular blocky.  
 Consistence = Slightly hard to hard dry, very friable to firm moist, slightly sticky or sticky and slightly plastic or plastic wet.  
 Reaction = Neutral to strongly alkaline.

**Theriot Series**

The Theriot series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from limestone and dolomite. Theriot soils are on hills. Slopes are 30 to 50 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is 53 degrees, F.

**Taxonomic class:** Loamy-skeletal, carbonatic, mesic Lithic Torriorthents

**Typical pedon:** Theriot very stony loam, 30 to 50 percent slopes, in map unit 910. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 20 percent pebbles, 5 percent cobbles, and 10 percent stones.

A = 0 to 4 inches; light brownish gray (10YR 6/2) very stony loam, dark grayish brown (10YR 4/2) moist; weak very fine, fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine tubular pores;

25 percent pebbles, 5 percent cobbles and 25 percent stones; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

C = 4 to 9 inches; light brownish gray (10YR 6/2) very cobbly sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine interstitial pores; 20 percent pebbles and 30 percent cobbles; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.  
 R = 9 inches; fractured limestone bedrock.

**Type location:** Churchill County, Nevada; approximately 2.5 miles northwest of Middlegate; 2,150 feet east and 2,300 feet south of the northwest corner of section 29, T.17 N., R.35 E.; (39 degrees, 18 minutes, 37 seconds north latitude and 118 degrees, 03 minutes, 57 seconds west longitude.)

**Range in Characteristics:**

**Soil moisture:** Usually dry, moist in some part for short periods during winter and early spring months and for 10 to 20 days in the upper part in the summer due to convection storms.

**Soil temperature:** 53 to 59 degrees, F.

**Depth to bedrock:** 4 to 20 inches to a lithic contact.

**Control section:**

Clay content = Averages 6 to 14 percent.  
 Rock fragments = 50 to 80 percent; dominantly stones or cobbles.  
 Reaction = Moderately alkaline to very strongly alkaline.

**A horizon:**

Value = 6 or 7 dry, 4 or 5 moist.  
 Chroma = 2 or 3.

**C horizon:**

Value = 6 or 7 dry, 4 or 5 moist.  
 Chroma = 2 through 4.  
 Structure = Platy or subangular blocky or is massive.  
 Consistence = Soft or slightly hard, dry very friable or friable moist.  
 Texture = Loam, fine sandy loam or sandy loam.



Carbonates=Thin to thick lime pendants on rock fragments are common in the lower part.

Calcium carbonate equivalent=20 to 40 percent in the less than 2 millimeter fraction and 40 to 60 percent in the less than 20 millimeter fraction.

## Tocan Series

The Tocan series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Tocan soils are on fan remnants and beach terraces. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees, F.

**Taxonomic class:** Fine-loamy, mixed, mesic Duric Haplargids

**Typical pedon:** Tocan sandy loam, 2 to 8 percent slopes, in map unit 1171. (Colors are for dry soil unless otherwise noted.)

A=0 to 4 inches; light gray (10YR 7/2) sandy loam, brown (10YR 4/3) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine and fine vesicular pores; 10 percent fine pebbles; slightly effervescent; mildly alkaline (pH 7.8); clear wavy boundary.

Bt=4 to 16 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, friable, sticky and slightly plastic; common very fine and fine and few medium roots; many very fine and few fine tubular pores; continuous thin clay films bridging sand grains and lining pores; 10 percent fine pebbles; moderately alkaline (pH 8.4); clear wavy boundary.

Bqk1=16 to 28 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; many very fine and fine and few medium roots; many very fine interstitial pores; 20 percent fine pebbles; 30 percent durinodes; strongly effervescent; strongly alkaline (pH 9.0); gradual wavy boundary.

Bqk2=28 to 60 inches; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine interstitial pores; 20 percent fine pebbles; 15 percent durinodes; strongly effervescent; strongly alkaline (pH 9.0).

**Type location:** Churchill County, Nevada; approximately 11 miles north of Brady Hot Springs; 950 feet east and 1,700 feet north of the southwest corner of section 13, T.24 N., R.26 E.; (39 degrees, 56 minutes, 43 seconds north latitude and 119 degrees, 00 minutes, 59 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* Moist in winter and early spring, dry from late spring through fall.

*Soil temperature:* 52 to 54 degrees, F.

*Depth to base of argillic horizon:* 12 to 18 inches.

*Control section:*

Clay content=20 to 28 percent.

Rock fragments=0 to 20 percent pebbles.

### A horizon:

Value=6 or 7 dry, 3 or 4 moist.

Chroma=2 or 3.

Rock fragments=0 to 40 percent pebbles.

Reaction=Neutral to moderately alkaline.

### Bt horizon:

Hue=10YR or 7.5YR.

Value=5 through 7 dry, 4 or 5 moist.

Chroma=3 or 4.

Texture=Gravelly loam, gravelly sandy clay loam, or sandy clay loam.

Rock fragments=0 to 20 percent pebbles.

Reaction=Neutral to moderately alkaline.

### Bqk horizons:

Texture=Stratified loam to very gravelly sand.

Reaction=Moderately alkaline or strongly alkaline.

Effervescence=Noneffervescent to strongly effervescent.

Other features=20 to 80 percent durinodes in some subhorizons, mostly small and medium, slightly hard to very hard.

## Toulon Series

The Toulon series consists of very deep, excessively drained soils that formed in alluvium derived from mixed rocks. Toulon soils are on longshore bars. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees, F.

**Taxonomic class:** Sandy-skeletal, mixed, mesic  
Typic Camborthids

**Typical pedon:** Toulon very gravelly loam, 2 to 8 percent slopes, in map unit 185. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 45 percent pebbles.

A=0 to 2 inches; light gray (2.5Y 7/2) very gravelly loam, grayish brown (2.5Y 5/2) moist; weak medium platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine vesicular pores; 35 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

Bw1=2 to 5 inches; light olive brown (2.5Y 5/3) very gravelly sandy loam, olive brown (2.5Y 4/3) moist; moderate medium and coarse subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; many very fine and fine interstitial pores; few fine prominent brown (7.5YR 5/4) relict masses of iron accumulation; 40 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Bw2=5 to 16 inches; light brownish gray (2.5Y 6/2) very gravelly sandy loam, dark grayish brown (2.5Y 4/2) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine and fine interstitial pores; common medium prominent brown (7.5YR 5/4) relict masses of iron accumulation; 55 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); gradual wavy boundary.

Bk=16 to 60 inches; light gray (10YR 7/2) stratified gravelly coarse sand to extremely gravelly coarse sand, pale brown (10YR 6/3) moist; single grain; loose, nonsticky and

nonplastic; many very fine and fine interstitial pores; 55 percent pebbles and 15 percent cobbles; 20 percent large cemented masses of tufa; common medium and coarse lime coats on undersides of rock fragments; violently effervescent; strongly alkaline (pH 8.9).

**Type location:** About 30 miles north of Fallon; 2,300 feet east and 2,300 feet south of the northwest corner of section 2, T.24 N., R.29 E.; (39 degrees, 58 minutes, 43 seconds north latitude and 118 degrees, 41 minutes, 32 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods during winter and spring, dry summer to mid fall.

**Soil temperature:** 53 to 57 degrees, F.

**Depth to base of cambic horizon:** 13 to 20 inches.

Reaction=Moderately alkaline or strongly alkaline.

Other features=Soils on the lower parts of bars and terraces, commonly have thinner A and Bw horizons than those on higher parts.

### A horizon:

Hue=2.5Y or 10YR.

Value=6 through 8 dry, 4 or 5 moist.

Chroma=2 or 3.

Effervescence=Noneffervescent to violently effervescent.

### Bw horizons:

Hue=2.5Y or 10YR.

Value=6 or 7 dry, 4 or 5 moist.

Chroma=2 through 4.

Texture=Very gravelly sandy loam, very gravelly loam, or very gravelly coarse sandy loam.

Rock fragments=40 to 60 percent, mostly pebbles.

Consistence=Soft or slightly hard dry.

Effervescence=Slightly effervescent to violently effervescent.

Carbonates=Lime coats are none or very few on the undersides of rock fragments.

Other features=Redoximorphic features are present as relict masses of iron accumulation and often increase with depth.

**Bk horizon:**

Hue = 10YR, 7.5YR or N (neutral).

Value = 5 through 8 dry, 4 through 8 moist.

Chroma = 0 through 2 dry, 0 through 4 moist.

Texture = Stratified gravelly coarse sand to extremely cobbly coarse sand.

Clay content = 0 to 3 percent.

Rock fragments = Average 5 to 35 percent cobbles, 45 to 60 percent pebbles. Any single stratum may contain up to 80 percent pebbles or cobbles.

Structure = Single grain or massive.

Consistence = Soft dry, very friable moist or is loose.

Effervescence = Slightly effervescent to violently effervescent.

Carbonates = Lime coats are few or common on the undersides of rock fragments.

## Trocken Series

The Trocken series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Trocken soils are on fan remnants, inset fans, fan skirts, longshore bars, barrier beaches, beach terraces, and lake terraces. Slopes are 0 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed (calcareous), mesic Typic Torriorthents

**Typical pedon:** Trocken very fine sandy loam, 0 to 2 percent slopes, in map unit 280. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 1 inch; light gray (10YR 7/2) very fine sandy loam, brown (10YR 4/3) moist; strong medium platy structure parting to strong very thin platy; slightly hard, very friable, slightly sticky and nonplastic; common fine vesicular and tubular pores; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

A2 = 1 to 5 inches; light gray (10YR 7/2) very fine sandy loam, grayish brown (10YR 5/2) moist; strong medium and thick platy structure parting to weak medium subangular blocky; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, medium and coarse roots;

common very fine tubular pores; 5 percent pebbles; violently effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

Bw = 5 to 9 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine and few medium roots; common very fine, fine and medium tubular pores; strongly effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

Bk = 9 to 26 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common medium tubular pores; few fine lime filaments; 45 percent pebbles; violently effervescent; very strongly alkaline (pH 9.2); abrupt smooth boundary.

C1 = 26 to 43 inches; light brownish gray (10YR 6/2) finely stratified very gravelly very fine sandy loam and coarse sand, dark grayish brown (10YR 4/2) moist; massive; hard and loose, very friable and loose, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 40 percent pebbles; slightly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

C2 = 43 to 60 inches; light brownish gray (10YR 6/2) gravelly loamy coarse sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 38 miles northeast of Fallon; 1,000 feet north and 2,500 feet east of the southwest corner of section 23, T.23 N., R.33 E.; (39 degrees, 50 minutes, 34 seconds north latitude and 118 degrees, 14 minutes, 22 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Usually dry, moist for short periods in the winter and spring, dry late May through November.

**Soil temperature:** 53 to 57 degrees, F.

**Control section:**

Clay content = 8 to 18 percent.

Rock fragments = 35 to 70 percent.  
 Combined thickness of A and Bw horizons = 5 to 10 inches.  
 Reaction = Neutral to very strongly alkaline.

**A horizons:**

Hue = 10YR or 2.5Y.  
 Value = 5 through 7 dry; 4 through 6 moist.  
 Chroma = 2 or 3.

**Bw, Bk, and C horizons:**

Hue = 7.5YR through 2.5Y.  
 Value = 5 through 7 dry, 4 or 5 moist.  
 Chroma = 2 through 4.  
 Structure = Subangular blocky, platy or horizons are massive.  
 Texture = Highly stratified layers that average very cobbly loam to extremely gravelly coarse sandy loam, individual strata range from gravelly loam through extremely gravelly coarse sand.  
 Rock fragments = 20 to 65 percent in individual subhorizons.  
 Consistence = Soft or slightly hard, dry.

## Umberland Series

The Umberland series consists of very deep, somewhat poorly drained soils that formed in lacustrine sediments derived from mixed rocks. Umberland soils are on drainageways and lake terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 49 degrees, F.

**Taxonomic class:** Fine, montmorillonitic (calcareous), mesic Aeric Halaquepts

**Typical pedon:** Umberland silty clay loam, 0 to 2 percent slopes, in map unit 1332. (Colors are for dry soil unless otherwise noted.)

A = 0 to 3 inches; light brownish gray (2.5Y 6/2) silty clay loam, olive brown (2.5Y 4/3) moist; strong fine granular structure; hard, firm, sticky and plastic; many very fine and few fine roots; many very fine and fine and few medium tubular pores; strongly effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.

C1 = 3 to 10 inches; light brownish gray (2.5Y 6/2) silty clay loam, olive brown (2.5Y 4/3) moist; weak coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; common very fine and fine roots; many very fine and common fine tubular pores; slightly effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

C2 = 10 to 21 inches; light gray (2.5Y 7/2) silty clay; dark grayish brown (2.5Y 4/2) moist; few fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; moderate fine angular blocky structure; very hard, very firm, very sticky and very plastic; common very fine and few fine roots in vertical and horizontal cracks; common fine tubular pores; slightly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

Ck1 = 21 to 36 inches; light gray (2.5Y 7/2) silty clay, dark grayish brown (2.5Y 4/2) moist; few fine distinct dark yellowish brown (10YR 4/4) and dark brown (10YR 3/3) masses of iron and manganese accumulation; moderate fine angular blocky structure; very hard, very firm, very sticky and very plastic; few very fine and fine roots in vertical and horizontal cracks; common fine tubular pores; few small lime nodules; strongly effervescent; strongly alkaline (pH 8.8); gradual smooth boundary.

Ck2 = 36 to 60 inches; light gray (2.5Y 7/2) silty clay, dark grayish brown (2.5Y 4/2) moist; few fine distinct dark yellowish brown (10YR 4/4) and dark brown (10YR 3/3) masses of iron and manganese accumulation; moderate fine angular blocky structure; very hard, very firm, very sticky and very plastic; few fine tubular pores; few fine exped roots; few small lime nodules; slightly and strongly effervescent; strongly alkaline (pH 8.8).

**Type location:** Churchill County, Nevada; approximately 700 feet west and 1,500 feet south of the northeast corner of section 23, T.21 N., R.25 E.; (39 degrees, 40 minutes, 34 seconds north latitude and 119 degrees, 08 minutes, 05 seconds west longitude.)

**Range in Characteristics:**

**Soil moisture:** Saturated in some horizon between depths of 18 and 40 inches for at least a month

during most years and the capillary fringe moistens the soil to within 6 inches of the surface.

*Soil temperature:* 47 to 52 degrees, F.

*Control section:*

Clay content = 35 to 50 percent.

Depth to secondary carbonates = 15 to 35 inches. They occur as concretions or nodules.

Salt and sodium = These soils are strongly saline-sodic affected in the upper part of the profile with concentrations usually decreasing with depth.

#### **A horizon:**

Hue = 10YR through 5Y.

Value = 6 through 8 dry, 4 through 6 moist.

Chroma = 2 through 4.

Salinity (EC) = 16 to 32 mmhos/cm.

Sodicity (SAR) = 46 to 90.

#### **C and Ck horizons:**

Hue = 2.5Y or 5Y.

Value = 6 through 8 dry, 4 through 6 moist.

Chroma = 1 through 4.

Texture = Silty clay, silty clay loam, or clay.

Structure = Granular, massive, subangular blocky, angular blocky or prismatic, slightly hard or hard, very friable to firm moist, sticky or very sticky and plastic or very plastic.

Reaction = Strongly alkaline or very strongly alkaline, usually decreasing with depth.

Salinity (EC) = 4 to 32 mmhos/cm.

Sodicity (SAR) = 46 to 90.

The soil surface is covered with approximately 45 percent pebbles.

A = 0 to 5 inches; light gray (10YR 7/2) very gravelly fine sandy loam, grayish brown (10YR 5/2) moist; strong thick platy structure parting to moderate thin platy; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine, fine and medium vesicular pores; 40 percent pebbles and 10 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bt = 5 to 12 inches; yellowish brown (10YR 5/4) gravelly clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, very firm, sticky and plastic; many very fine and few fine roots; common very fine tubular and many fine interstitial pores; common thin clay films on faces of peds, lining pores and bridging sand grains; 20 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bqk = 12 to 35 inches; very pale brown (10YR 7/3) gravelly sandy loam, brown (7.5YR 5/4) moist; massive; soft, very friable and brittle, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine tubular and interstitial pores; 30 percent pebbles; thin lime pendants on underside of pebbles; 5 percent lime nodules; 30 percent discontinuous brittle matrix; violently effervescent; strongly alkaline (pH 8.8); gradual smooth boundary.

2C = 35 to 60 inches; very pale brown (10YR 7/3) very gravelly loamy sand, brown (7.5YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine and medium roots; many very fine and fine tubular and interstitial pores; 50 percent pebbles; violently effervescent; strongly alkaline (pH 8.8).

**Type location:** Churchill County, Nevada; approximately 15 miles south of Middlegate; 1,700 feet north of the projected southwest corner of section 8, T.14 N., R.35 E.; (39 degrees, 05 minutes, 18 seconds north latitude and 118 degrees, 04 minutes, 23 seconds west longitude.)

## **Unsel Series**

The Unsel series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. Unsel soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is 53 degrees, F.

**Taxonomic class:** Fine-loamy, mixed, mesic Duric Haplargids

**Typical pedon:** Unsel very gravelly fine sandy loam, 2 to 8 percent slopes in map unit 1020. (Colors are for dry soil unless otherwise noted.)

#### **Range in Characteristics:**

*Soil moisture:* Usually dry, moist in some part for

short periods during winters and early spring months and for 10 to 20 days cumulative between July and October due to convection storms.

*Soil temperature:* 53 to 59 degrees, F.

*Depth to base of argillic horizon:* 10 to 22 inches.

*Depth to sandy horizons:* 20 to 36 inches.

*Effervescence:* Noneffervescent to violently effervescent.

**Control section:**

Clay content = 27 to 35 percent.

Rock fragments = 15 to 30 percent mainly pebbles.

**A horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4 dry or moist.

Reaction = Moderately alkaline to very strongly alkaline.

**Bt and Btk horizons:**

Value = 5 through 7 dry; 3 through 6 moist.

Chroma = 2 through 4.

Texture (less than 2 millimeter fraction) = Clay loam or sandy clay loam.

Rock fragments = 15 to 30 percent, mainly pebbles.

Structure = Weak or moderate, fine or medium subangular blocky, and weak medium or coarse prismatic.

Consistence = Slightly hard or hard dry, very friable or very firm moist, slightly sticky to sticky and slightly plastic to plastic.

Reaction = Mildly alkaline to strongly alkaline.

**Bqk horizon:**

Value = 6 through 8 dry; 4 through 6 moist.

Chroma = 2 through 4.

Texture (less than 2 millimeter fraction) = Sandy loam or sandy clay loam.

Rock fragments = 15 to 35 percent, mainly pebbles.

Consistence = Soft to hard, very friable to firm, nonsticky or slightly sticky and nonplastic or slightly plastic.

**2C horizon:**

Value = 6 through 8 dry, 3 through 5 moist.

Chroma = 2 through 4.

Texture (less than 2 millimeter fraction) = Sand or loamy sand.

Rock fragments = 40 to 70 percent mainly pebbles with 0 to 5 percent cobbles in some pedons.

Consistence = Soft or slightly hard, very friable or friable.

Other features = 20 to 65 percent discontinuous strong silica and lime cementation in some pedons.

## Uripnes Series

The Uripnes series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from granitic rocks. Uripnes soils are on hills and mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 49 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, nonacid, mesic, shallow Typic Torriorthents

**Typical pedon:** Uripnes very stony sandy loam, 30 to 50 percent slopes, in map unit 230. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 30 percent pebbles, 10 percent cobbles, and 5 percent stones.

A = 0 to 4 inches; light brownish gray (10YR 6/2) very stony sandy loam, dark grayish brown (10YR 4/2) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; very few very fine roots; common fine interstitial and few fine tubular pores; 30 percent pebbles, 10 percent cobbles, and 5 percent stones; neutral (pH 6.6); clear wavy boundary.

Cr = 4 to 21 inches; weathered granodiorite with soil in fractures in upper few inches.

R = 21 inches; hard granodiorite.

**Type location:** Churchill County, Nevada; approximately 33 miles southeast of Fallon in the Sand Springs Range; about 300 feet west and 900 feet south of the projected northeast corner of section 26, T.15 N., R.32 E.; (39 degrees, 08 minutes, 20 seconds north latitude and 118 degrees, 19 minutes, 57 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry, moist for short periods in winter and spring, summer and autumn.

*Soil temperature:* 47 to 54 degrees, F.

*Depth to bedrock:* 4 to 14 inches to a paralithic contact. Hard bedrock is within 40 inches.

**Control section:**

Clay content = 10 to 18 percent.

Rock fragments = 35 to 60 percent, dominantly fine pebbles with cobbles and stones common.

Reaction = Slightly acid to mildly alkaline.

Other features = Some pedons have a thin C horizon above the paralithic contact with textures in the less than 2 millimeter fraction of sandy loam or coarse sandy loam.

**A horizon:**

Value = 5 through 7 dry, 3 through 5 moist.

When darker colors are present, they reflect the colors of the parent material.

Chroma = 2 or 3, dry or moist.

**Vium Series**

The Vium series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium derived from granitic rocks. Vium soils are on hills. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees, F.

**Taxonomic class:** Loamy-skeletal, mixed, mesic Lithic Haplargids

**Typical pedon:** Vium gravelly coarse sandy loam, 2 to 8 percent slopes, in map unit 1290. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 50 percent pebbles.

A = 0 to 2 inches; pale brown (10YR 6/3) gravelly coarse sandy loam, dark brown (10YR 4/3) moist; weak thin platy structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine interstitial pores; 30 percent fine pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Btk = 2 to 8 inches; yellowish brown (10YR 5/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine and common fine and few medium roots; many very fine and fine and few medium tubular pores; 40 percent fine pebbles; continuous thin and moderately thick clay films on faces of peds and lining pores; few fine lime filaments; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R = 8 inches; granitic bedrock weathered in the upper 3 to 4 inches.

**Type location:** Churchill County, Nevada; approximately 2,350 feet north and 2,200 feet east of the southwest corner of section 34, T.25 N., R.29 E.; (39 degrees, 59 minutes, 29 seconds north latitude and 118 degrees, 42 minutes, 40 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry, moist for short periods in winter and spring, dry from May through November.

*Soil temperature:* 53 to 59 degrees, F.

*Depth to bedrock:* 8 to 14 inches to a lithic contact.

**Control section:**

Clay content = Averages 8 to 16 percent.

Rock fragments = 35 to 50 percent, mainly fine pebbles.

Other features = Up to 8 inches of the upper part of the bedrock is fractured or weathered in most pedons.

**A horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

**Btk horizon:**

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 2 or 3.

Texture = Very gravelly sandy loam or very gravelly coarse sandy loam.

Clay content = 10 to 18 percent.

Rock fragments = 40 to 60 percent, mainly fine pebbles.

Effervescence = Slightly effervescent or strongly effervescent.

## Walti Series

The Walti series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from volcanic rocks. Walti soils are on mountains. Slopes are 4 to 30 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 44 degrees, F.

**Taxonomic class:** Fine, montmorillonitic, frigid  
Aridic Argixerolls

**Typical pedon:** Walti very stony loam, 4 to 15 percent slopes, in map unit 850. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 10 percent pebbles, 10 percent cobbles, and 7 percent stones.

A=0 to 4 inches; brown (7.5YR 5/2) very stony loam, dark brown (7.5YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine interstitial and few very fine tubular pores; 10 percent pebbles, 5 percent cobbles, and 20 percent stones; neutral (pH 6.6); clear smooth boundary.

2Bt1=4 to 10 inches; brown (7.5YR 5/2) clay loam, dark brown (7.5YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and fine roots; common very fine tubular pores; 5 percent pebbles; common pressure faces; common thin clay films lining pores; neutral (pH 6.6); abrupt smooth boundary.

3Bt2=10 to 18 inches; brown (7.5YR 5/4) clay, dark brown (7.5YR 4/2) moist; strong fine and medium angular blocky structure; hard, firm, very sticky and very plastic; few very fine roots; common very fine tubular pores; many pressure faces; common thin clay films lining pores; 10 percent pebbles; neutral (pH 6.8); clear smooth boundary.

3Bt3=18 to 22 inches; brown (7.5YR 5/4) gravelly clay, dark brown (7.5YR 4/2) moist; strong fine and medium angular blocky structure; hard, firm, very sticky and very plastic; few very fine roots; common very fine tubular pores; many pressure faces; common

thin clay films lining pores; 25 percent pebbles; neutral (pH 6.8); clear wavy boundary.  
3R=22 inches; basalt; few roots and clay in fractures.

**Type location:** Churchill County, Nevada; approximately 17.5 miles north of Frenchman and 2/3 mile northeast of the junction of Elevenmile and Huckleberry Canyons; 2,500 feet east and 300 feet north of the southwest corner of section 5, T.19 N., R.33 E.; (39 degrees, 31 minutes, 58 seconds north latitude and 118 degrees, 18 minutes, 13 seconds west longitude.)

### Range in Characteristics:

*Soil moisture:* Usually dry, moist in winter and spring, dry from late June to mid-October.

*Soil temperature:* 44 to 46 degrees, F.

*Mollic epipedon thickness:* 7 to 17 inches, commonly includes upper part of the argillic horizon.

*Depth to bedrock:* 20 to 30 inches to a lithic contact.

### Control section:

Clay content = Averages 40 to 50 percent.

Rock fragments = 5 to 25 percent, mainly pebbles.

Reaction = Neutral or mildly alkaline.

### A horizon:

Hue = 7.5YR or 10YR.

Value = 4 or 5 dry.

Chroma = 2 or 3.

### Bt horizons:

Hue = 10YR or 7.5YR.

Value = 4 or 5 dry, 3 or 4 moist. Some pedons are 6 dry in the lower subhorizon above the bedrock.

Chroma = 2 through 4.

Texture = Clay loam or gravelly clay loam with 27 to 35 percent clay and an abrupt lower boundary in the upper subhorizon. Clay or gravelly clay with 50 to 60 percent clay in the lower subhorizons.

Rock fragments = 5 to 25 percent, mostly pebbles and cobbles.

Structure = Prismatic or angular blocky; upper subhorizons are subangular blocky in some pedons.



Consistence = Very friable to firm, moist; sticky or very sticky, plastic or very plastic, wet.

## Watoopah Series

The Watoopah series consists of very deep, well drained soils that formed in alluvium derived from volcanic rocks. Watoopah soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 50 degrees, F.

**Taxonomic class:** Coarse-loamy, mixed, mesic Durixerollic Haplargids

**Typical pedon:** Watoopah sand, 2 to 8 percent slopes, in map unit 241. (Colors are for dry soil unless otherwise noted.)

A = 0 to 2 inches; light brownish gray (10YR 6/2) sand, dark grayish brown (10YR 4/2) moist; strong thick platy structure; soft, very friable, nonsticky and nonplastic; many very fine and fine vesicular pores; mildly alkaline (pH 7.8); abrupt smooth boundary.

Bt1 = 2 to 9 inches; brown (7.5YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium and coarse subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common fine and medium roots; common very fine and fine tubular pores; common thin clay films on faces of pedis and lining pores; 5 percent pebbles; neutral (pH 7.0); clear smooth boundary.

Bt2 = 9 to 16 inches; yellowish brown (10YR 5/4) sandy loam, brown (10YR 4/3) moist; moderate medium and coarse subangular blocky structure; soft, friable, slightly sticky and nonplastic; common fine roots; many fine and common medium tubular pores; few thin clay films occurring as bridges between sand grains; 5 percent pebbles; neutral (pH 7.0); clear smooth boundary.

Bq = 16 to 29 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine tubular and many very fine interstitial pores; 15 percent durinodes; 5 percent pebbles; mildly alkaline (pH 7.8); clear smooth boundary.

Bqk1 = 29 to 35 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine tubular and interstitial pores; few fine lime masses; carbonates coat entire rock fragments; 10 percent pebbles; 20 percent weakly cemented durinodes; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bqk2 = 35 to 53 inches; pale brown (10YR 6/3) gravelly sand, brown (10YR 4/3) moist; massive; hard, friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine interstitial pores; 35 percent strongly cemented durinodes; 20 percent pebbles; common lime coats on rock fragments; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

Bqk3 = 53 to 60 inches; yellowish brown (10YR 5/4) gravelly sand, brown (10YR 4/3) moist; massive; very hard, very firm, nonsticky and nonplastic; few fine roots; few very fine interstitial and many fine tubular pores; common fine lime filaments; 50 percent strongly cemented durinodes; 20 percent pebbles; violently effervescent; strongly alkaline (pH 8.8).

**Type location:** Churchill County, Nevada; approximately 26 miles southeast of Fallon; 1,300 feet north and 2,080 feet east of the projected southwest corner of section 15, T.15 N., R.31 E.; (39 degrees, 09 minutes, 32 seconds north latitude and 118 degrees, 30 minutes, 18 seconds west longitude.)

### Range in Characteristics:

**Soil moisture:** Moist in winter and spring and for 10 to 20 days cumulative in the upper part, between June and September due to convection storms.

**Soil temperature:** 53 to 59 degrees, F.

**Depth to base of argillic horizon:** 10 to 24 inches.

**Control section:**

Clay content = 10 to 18 percent.

Rock fragments = 5 to 25 percent, mainly pebbles.

**A horizon:**

Value = 6 or 7 dry, 3 or 4 moist.

Chroma = 2 or 3.

Reaction = Neutral or mildly alkaline.

**Bt horizons:**

Hue = 10YR or 7.5YR.

Value = 5 or 6 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Sandy loam or gravelly sandy loam.

Consistence = Friable or very friable moist;  
nonsticky or slightly sticky and nonplastic or  
slightly plastic, wet.

Reaction = Neutral or mildly alkaline.

**Bq and Bqk horizons:**

Value = 5 through 7 dry, 4 or 5 moist.

Chroma = 3 or 4.

Texture = Gravelly loamy sand, gravelly sandy  
loam, or sandy loam.

Structure = Massive or subangular blocky.

Consistence = Soft to hard, very friable to firm,  
nonsticky or slightly sticky and nonplastic or  
slightly plastic.

Effervescence = Noneffervescent to violently  
effervescent.

Rock fragments = 5 to 35 percent, mainly  
pebbles.

Reaction = Mildly alkaline or moderately alkaline.

Silica cementation = Weakly cemented; pedons  
contain 20 to 50 percent weakly to strongly  
cemented durinodes and may also have a  
continuous brittle matrix.

## Welch Series

The Welch series consists of very deep, very poorly drained soils that formed in alluvium derived from volcanic rocks and vitric pyroclastic materials. Welch soils are on stream terraces. Slopes are 2 to 8 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 42 degrees, F.

**Taxonomic class:** Fine-loamy, mixed, frigid Cumulic Endoaquolls

**Typical pedon:** Welch clay loam, 4 to 8 percent slopes, in map unit 760. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 6 inches; very dark gray (10YR 3/1) clay

loam, black (10YR 2/1) moist; moderate thin platy structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; few fine tubular pores; neutral (pH 6.8); clear smooth boundary.

A2 = 6 to 17 inches; very dark gray (10YR 3/1) clay loam, black (10YR 2/1) moist; common faint dark gray (N 4) zones of manganese accumulation; moderate medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common fine and medium roots; common fine tubular pores; neutral (pH 6.8); clear smooth boundary.

A3 = 17 to 24 inches; very dark grayish brown (10YR 3/2) clay loam, black (10YR 2/1) moist, common faint dark gray (N 4) zones of manganese accumulation; massive; slightly hard, friable, sticky and plastic; common fine and medium roots; common fine tubular pores; neutral (pH 6.8); clear smooth boundary.

A4 = 24 to 35 inches; very dark gray (10YR 3/1) clay loam, black (10YR 2/1) moist, common medium distinct gray (5YR 5/1) zones of iron depletion and few fine prominent yellowish red (5YR 4/6) masses of iron accumulation lining pores; massive; slightly hard, friable, sticky and plastic; common fine roots; few fine tubular pores; neutral (pH 6.8); clear smooth boundary.

C = 35 to 60 inches; gray (5Y 5/1) clay loam, dark gray (5Y 4/1) moist; massive; slightly hard, friable, sticky and plastic; few fine roots; neutral (pH 6.8).

**Type location:** Churchill County, Nevada; approximately 13 miles northwest of Cold Springs; 300 feet east and 1,400 feet north of the southwest corner of section 21, T.20 N., R.36 E.; (39 degrees, 34 minutes, 53 seconds north latitude and 117 degrees, 56 minutes, 34 seconds west longitude.)

**Range in Characteristics:**

**Soil moisture:** Welch soils are saturated and have aquic conditions at or near the surface for a least one month during most years, mainly during the late winter and early spring months, water table drops to a depth of 18 to 36 inches from early spring through September.

**Soil temperature:** 41 to 46 degrees, F.

*Mollic epipedon thickness:* 26 to over 60 inches, organic matter decreases irregularly with depth.

**Control section:**

Clay content = Averages 27 to 35 percent.

Other features = (The parent material has a large component of vitric pyroclastic materials.)

Buried A horizons are common. Some pedons have gravelly strata or strata of silty clay loam, silt loam, clay, loam, very fine sandy loam or sandy loam.

**A horizons:**

Hue = 10YR through 5Y or neutral.

Value = 3 through 5 dry, 2 or 3 moist.

Chroma = 0 through 3 in the upper part and 0 through 2 in the lower part.

Reaction = Slightly acid to mildly alkaline.

Redoximorphic features = Few to many, fine or medium, distinct or prominent zones of iron or manganese accumulation either lining pores or as masses within the matrix. Zones of iron depletion may also be present.

**C horizon:**

Hue = 10YR through 5B or neutral (N).

Value = 5 through 8 dry, 3 through 5 moist.

Chroma = 0 through 2.

Structure = Massive or prismatic.

Texture = Stratified sandy loam to silty clay loam, averaging clay loam.

Consistence = Slightly hard or hard dry, very friable or friable moist. Slightly sticky or sticky and slightly plastic or plastic.

Redoximorphic features = None to many, fine to coarse zones of iron or manganese accumulation either lining pores or as masses within the matrix. Zones of iron depletion may also be present.

## Wholan Series

The Wholan series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Wholan soils are on inset fans and fan skirts. Slopes are 0 to 4 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 49 degrees, F.

**Taxonomic class:** Coarse-silty, mixed, mesic Typic Camborthids

**Typical pedon:** Wholan silt loam, 0 to 2 percent slopes, in map unit 450. (Colors are for dry soil unless otherwise noted.)

A1 = 0 to 4 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate thin and medium platy structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; many very fine interstitial pores; moderately alkaline (pH 8.2); clear smooth boundary.

A2 = 4 to 7 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine and fine tubular pores; moderately alkaline (pH 8.4); clear smooth boundary.

Bw = 7 to 16 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common fine tubular pores; moderately alkaline (pH 8.4); clear smooth boundary.

Bk = 16 to 31 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common fine tubular pores; few thin lime seams; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C = 31 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; slightly effervescent; strongly alkaline (pH 8.6).

**Type location:** Churchill County, Nevada; approximately 17 miles northeast of Cold Springs; 2,500 feet east and 100 feet south of the northwest corner of section 31, T.20 N., R.39 E.; (39 degrees, 33 minutes, 47 seconds north latitude and 117 degrees, 38 minutes, 06 seconds west longitude.)

**Range in Characteristics:**

*Soil moisture:* Usually dry, moist in winter and spring, dry late May through October.

*Soil temperature:* 47 to 53 degrees, F.

*Depth to base of cambic horizon:* 11 to 24 inches.

**Salinity (EC):** 0 to 8 mmhos/cm in the upper 30 inches and 8 to 16 at depths below 30 inches.

**Sodicity (SAR):** 0 to 12.

**Control section:**

Clay content = 5 to 15 percent.

Reaction = Mildly alkaline to very strongly alkaline, increasing with depth.

Other features = Thin strata with up to 5 percent one-half to three-fourth inch very hard, firm, brittle durinodes in the C horizons of some pedons.

**A horizons:**

Value = 5 through 7 dry, 3 through 5 moist (5 dry and 3 moist in the A1 horizon only.)

Chroma = 2 through 4.

Effervescence = Noneffervescent or slightly effervescent.

**Bw horizon:**

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture = Silt loam or very fine sandy loam.

Structure = Weak fine to coarse subangular blocky, medium or coarse prismatic.

Consistence = Soft or slightly hard dry; nonsticky or slightly sticky and nonplastic or slightly plastic, wet.

**Bk and C horizons:**

Value = 6 through 8 dry, 4 through 6 moist.

Chroma = 2 through 4.

Consistence = Soft to slightly hard nonsticky or slightly sticky and nonplastic or slightly plastic, wet.

Texture = Silt loam or very fine sandy loam with thin strata of loam or fine sandy loam in some pedons. Some pedons have stratified very gravelly loam to very gravelly sand below 40 inches.

Carbonates = Few to many, fine or medium veins and soft masses of lime in Bk horizons. C horizons lack segregated lime.

Other features = C horizons are below a depth of 60 inches in some pedons.

## Yerington Series

The Yerington series consists of very deep, well drained soils that formed in eolian sand and alluvium derived from mixed rocks. Yerington soils

are on sand sheets. Slopes are 2 to 4 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 51 degrees, F.

**Taxonomic class:** Sandy, mixed, mesic Typic Torriorthents

**Typical pedon:** Yerington loamy fine sand, 2 to 4 percent slopes, in map unit 551. (Colors are for dry soil unless otherwise noted.)

A = 0 to 3 inches; pale brown (10YR 6/3) loamy fine sand, dark brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 5 percent pebbles; moderately alkaline (pH 8.4); clear smooth boundary.

C1 = 3 to 15 inches; pale brown (10YR 6/3) loamy fine sand, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 5 percent pebbles; strongly alkaline (pH 8.5); clear wavy boundary.

C2 = 15 to 25 inches; pale brown (10YR 6/3) loamy fine sand with pockets and lenses of fine sandy loam and loamy very fine sand, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and few fine and medium roots; many very fine interstitial pores; 5 percent pebbles; strongly alkaline (pH 8.8); clear wavy boundary.

C3 = 25 to 32 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and few fine and medium roots; many very fine interstitial pores; 5 percent pebbles; strongly alkaline (pH 8.8); clear irregular boundary.

Bkb1 = 32 to 47 inches; pale brown (10YR 6/3) stratified loamy sand and sandy loam, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial pores; 5 percent pebbles; few fine lime coats on undersides of rock fragments; strongly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Bkb2 = 47 to 60 inches; pale brown (10YR 6/3) stratified loamy sand and sandy loam, dark brown (10YR 4/3) moist; massive; soft, very

friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial pores; 10 percent pebbles; few fine lime coats on undersides of rock fragments; strongly effervescent; strongly alkaline (pH 9.0).

**Type location:** Churchill County, Nevada; approximately 18 miles southwest of Fallon, 400 feet east of the southwest corner of section 13, T.16N., R.27E.; (39 degrees, 14 minutes, 30 seconds north latitude and 118 degrees, 54 minutes, 24 seconds west longitude.)

#### Range in Characteristics:

*Soil moisture:* Usually moist in winter and early spring, dry for the remainder of the year.

*Soil temperature:* 53 to 59 degrees, F.

*Depth to buried horizons with secondary carbonates:* 12 to 40 inches.

*Control section:*

Rock fragments = 0 to 20 percent.

#### A horizon:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 or 3.

Other features = Few thin (less than 1 centimeter thick) lamellae occur in some pedons.

#### C horizons:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture = Stratified loamy coarse sand to very fine sandy loam.

Rock fragments = Up to 20 percent pebbles.

Structure = Massive or single grain.

Consistence = Soft or loose.

Other features = Few thin (less than 1 centimeter thick) lamellae occur in some pedons.

#### Bkb horizons:

Value = 6 or 7 dry, 4 or 5 moist.

Chroma = 2 through 4.

Texture = Stratified loamy coarse sand to very fine sandy loam.

Rock fragments = Up to 20 percent pebbles in some pedons.

Structure = Massive or single grain.

Consistence = Loose or soft.

## Yody Series

The Yody series consists of moderately deep to a duripan, well drained soils that formed in alluvium derived from volcanic rocks. Yody soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 46 degrees, F.

**Taxonomic class:** Fine-loamy, mixed, mesic Haploxerollic Durargids

**Typical pedon:** Yody gravelly sandy loam, 4 to 8 percent slopes, in map unit 480. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with approximately 15 percent pebbles.

A1 = 0 to 1 inch; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; few fine vesicular pores; 15 percent pebbles; moderately alkaline (pH 7.9); abrupt smooth boundary.

A2 = 1 to 7 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate medium platy structure parting to weak fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine vesicular pores; 15 percent pebbles; moderately alkaline (pH 7.9); clear smooth boundary.

Bt = 7 to 12 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine and medium roots; few fine tubular pores; few thin clay films on faces of peds, lining pores and coating rock fragments; 20 percent pebbles and 10 percent cobbles; moderately alkaline (pH 7.9); clear smooth boundary.

Btk = 12 to 16 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; strong fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine and medium roots; common fine tubular pores;

common moderately thick clay films on faces of peds, coating rock fragments and lining pores; 20 percent pebbles and 5 percent cobbles; few fine lime filaments; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Bkq = 16 to 30 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; 25 percent pebbles; weak silica cementation; many lime coats on peds and rock fragments; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bqkm = 30 to 60 inches; light gray (10YR 7/2) strongly cemented duripan, pale brown (10YR 6/3) moist; massive; brittle; 40 percent pebbles and 10 percent cobbles; violently effervescent; moderately alkaline (pH 8.4).

**Type location:** Churchill County, Nevada; approximately 7.5 miles northwest of Eastgate; 1,000 feet east and 100 feet south of the projected northwest corner of section 31, T.18 N., R.36 E.; (39 degrees, 23 minutes, 20 seconds north latitude and 117 degrees, 58 minutes, 35 seconds west longitude.)

#### **Range in Characteristics:**

*Soil moisture:* Moist in winter and spring, dry in summer and fall.

*Soil temperature:* 47 to 52 degrees, F.

*Depth to base of argillic horizon:* 14 to 30 inches.

*Depth to calcic horizon:* 14 to 30 inches.

*Depth to thick, strongly cemented duripan:* 30 to 40 inches.

#### **Control section:**

Clay content = 20 to 35 percent.

Rock fragments = Averages 15 to 35 percent, mainly pebbles.

#### **A horizons:**

Value = 6 or 7 dry.

Chroma = 2 or 3.

Other features = Commonly has polygonal surface morphology with few to many vesicular pores.

#### **Bt and Btk horizons:**

Hue = 10YR or 7.5YR.

Value = 3 or 4 moist.

Chroma = 3 or 4.

Texture = Sandy clay loam, gravelly sandy clay loam, or gravelly clay loam.

Consistence = Slightly hard or hard, friable or firm.

Other features = Contains more than 35 percent sand.

#### **Bkq horizons:**

Value = 6 through 8 dry.

Chroma = 2 through 4.

Texture = Gravelly loam, gravelly sandy loam, or gravelly loamy sand.

Rock fragments = 15 to 35 percent.

Consistence = Slightly hard or hard, very friable to firm.

Reaction = Moderately alkaline or strongly alkaline.

Calcium carbonate equivalent = 5 to 10 percent.



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# Glossary

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**Aeration, soil.** The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

**Aggregate, soil.** Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

**Alkali (sodic) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

**Alluvial cone.** The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

**Alluvial fan.** The fanlike deposit of a stream where it issues from a narrow valley upon a plain, or of a tributary stream near or at its junction with its main stream.

**Alluvial flat.** A nearly level, graded, alluvial surface in bolsons and semi-bolsons. Commonly, an alluvial flat does not manifest terraces or floodplain levels.

**Alluvium.** Material, such as sand, silt, or clay, deposited on land by streams.

**Alpha,alpha-dipyridyl.** A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

**Animal unit month (AUM).** The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

**Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.

**Area reclaim** (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

**Argillic horizon.** A subsoil horizon characterized by an accumulation of illuvial clay.

**Argillite.** Weakly metamorphosed mudstone or shale.

**Arroyo.** The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

**Aspect.** The direction in which a slope faces.

**Association, soil.** A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

**Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low .....	0 to 3.5
Low .....	3.5 to 5
Moderate .....	5 to 7.5
High .....	more than 7.5

**Avalanche chute.** The track or path formed by an avalanche.

**Backslope.** The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Backslopes in profile are commonly steep, are linear, and may or may not include cliff segments.

**Backswamp.** A floodplain landform of extensive, marshy, or swampy, depressed areas of flood

plains between natural levees and valley sides or terraces.

**Badland.** Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

**Ballena.** A fan remnant having a distinctively-rounded surface of fan alluvium. The ballena's broadly rounded shoulders meet from either side to form a narrow summit and merge smoothly with concave, short pediments which form smoothly-rounded drainageways between adjacent ballenas. A partial ballena is a fan remnant large enough to retain some relict fan surface on a remnant summit.

**Barrier beach.** A wide gently sloping portion of a bolson floor comprising numerous, parallel, relict longshore-bars and lagoons built by a receding pluvial lake.

**Basal area.** The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

**Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

**Basin floor.** A general term for the nearly level, lower-most part of intermontane basins (i.e., bolson, semi-bolsos). The basin floor includes all of the alluvial, eolian, and erosional landforms below the piedmont slope.

**Beach terrace.** The relict shorelines from pluvial lakes, generally restricted to valley sides.

**Bedding planes.** Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

**Bedding system.** A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

**Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

**Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are

determined or strongly influenced by the underlying bedrock.

**Bench terrace.** A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

**Bisequum.** Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

**Blowout.** A shallow depression from which all or most of the soil material has been removed by wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts, the water table is exposed.

**Board foot.** A unit of measure of the wood in lumber, logs, or trees. The amount of wood in a board one foot wide, one foot long, and one inch thick before finishing.

**Bolson.** A landscape term for an internally drained intermontane basin into which drainages from surrounding mountains converge inward toward a central depression.

**Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.

**Breaks.** The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

**Breast height.** An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

**Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

**Butte.** An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.

**Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

**Caldera.** A large, more or less circular depression, formed by explosion and/or collapse, which surrounds a volcanic vent or vents, and whose

diameter is much greater than that of the included vent, or vents.

**Caliche.** A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.

**California bearing ratio (CBR).** The load-supporting capacity of a soil as compared to that of a standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

**Canopy.** The leafy crown of trees or shrubs. (See Crown.)

**Canyon.** A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

**Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

**Catena.** A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

**Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

**Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

**Channeled.** Refers to a drainage area in which natural meandering or repeated branching and convergence of a streambed have created deeply incised cuts, either active or abandoned, in alluvial material.

**Channery soil material.** Soil material that is, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a chanter.

**Chemical treatment.** Control of unwanted vegetation through the use of chemicals.

**Chiseling.** Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

**Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

**Clay depletions.** Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

**Clayey soil.** Silty clay, sandy clay, or clay.

**Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

**Claypan.** A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

**Clearcut.** A method of forest harvesting that removes the entire stand of trees in one cutting. Reproduction is achieved artificially or by natural seeding from adjacent stands.

**Climax plant community.** The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

**Closed depression.** A low area completely surrounded by higher ground and having no natural outlet.

**Coarse fragments.** Mineral or rock particles larger than 2 millimeters in diameter.

**Coarse textured soil.** Sand or loamy sand.

**Cobble (or cobblestone).** A rounded, partly rounded, or angular fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

**Cobbly soil material.** Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.

**Codominant trees.** Trees whose crowns form the general level of the forest canopy and that receive full light from above but comparatively little from the sides.

- Colluvium.** Unconsolidated, unsorted earth material moved and deposited by mass movement on sideslopes and at the base of slopes.
- Commercial forest.** Forest land capable of producing 20 cubic feet or more per acre per year at the culmination of mean annual increment.
- Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
- Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
- Compressible** (in tables). Excessive decrease in volume of soft soil under load.
- Concretions.** Cemented bodies with crude internal symmetry organized around a point, a line, or a plane that typically takes the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.
- Conglomerate.** A coarse grained, clastic rock composed of rounded to subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.
- Conservation cropping system.** Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.
- Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.
- Consistence, soil.** Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."
- Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.
- Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but, for many, it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.
- Coprogenous earth (sedimentary peat).** Fecal material deposited in water by aquatic organisms.
- Corrosion.** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.
- Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.
- Cropping system.** Growing crops according to a planned system of rotation and management practices.
- Crop residue management.** Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.
- Cross-slope farming.** Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.
- Crown.** The upper part of a tree or shrub, including the living branches and their foliage.
- Cuesta.** A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.
- Culmination of the mean annual increment (CMAI).** The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

**Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.

**Decreasers.** The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

**Deep soil.** A soil that is 40 to 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Deferred grazing.** Postponing grazing or resting grazing land for a prescribed period.

**Delta.** A body of alluvium having a surface that is nearly flat and fan shaped, deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

**Dense layer** (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

**Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

**Depth to rock** (in tables). Bedrock is too near the surface for the specified use.

**Desert pavement.** On a desert surface, a layer of gravel or larger fragments that was emplaced by upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

**Dip slope.** A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

**Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

**Divided-slope farming.** A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

**Dominant trees.** Trees whose crowns form the general level of the forest canopy and that receive full light from above and from the sides.

**Drainage class (natural).** Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed.

Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized: excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

**Drainage, surface.** Runoff, or surface flow of water, from an area.

**Drainageway.** An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

**Duff.** A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

**Dune.** A mound, ridge, or hill of loose, windblown granular material (generally sand), either bare or covered with vegetation.

**Ecological Site.** A distinctive kind of rangeland or grazed forestland that has a unique historic potential native plant community. Ecological sites are the products of all the environmental factors that affect their development. An ecological site is capable of supporting a native plant community that has a unique kind and/or proportion of species or total vegetative production. Ecological sites in grazed forestland include both overstory and understory vegetation.

**Effervescence.** The quality of a soil measured when drops of diluted (1:10) hydrochloric acid (HCL) are added to the soil. The ratings are as follows:

Very slightly effervescent .....	few bubbles
Slightly effervescent .....	bubbles readily
Strongly effervescent .....	bubbles form low foam
Violently effervescent .....	bubbles form thick foam quickly

- Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.
- Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.
- Eolian soil material.** Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.
- Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.
- Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.
- Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.  
*Erosion* (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.  
*Erosion* (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.
- Erosion pavement.** A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.
- Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.
- Even aged.** Refers to a stand of trees in which only small differences in age occur between the individuals. A range of 20 years is allowed.
- Excess alkali** (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.
- Excess fines** (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.
- Excess lime** (in tables). Excess carbonates in the soil that restrict the growth of some plants.
- Excess salts** (in tables). Excess water-soluble salts in the soil that restrict the growth of most plants.
- Excess sodium** (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.
- Excess sulfur** (in tables). Excessive amount of sulfur in the soil. The sulfur causes extreme acidity if the soil is drained, and the growth of most plants is restricted.
- Extrusive rock.** Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.
- Fallow.** Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.
- Fan apron.** A sheet-like mantle of relatively young alluvium covering part of an older fan piedmont surface. It somewhere buries a soil that can be traced to the edge of the fan apron.
- Fan piedmont.** The most extensive landform on piedmont slopes, formed by the coalescence of alluvial fans or accretions of fan aprons into one generally smooth slope.
- Fan remnant.** A general term for landforms that are remaining parts of older fan-landforms, that either have been dissected or partially buried.
- Fan skirt.** The zone of smooth, laterally-coalescing, small alluvial fans that issue from gullies cut into the fan piedmont or that are the coalescing extensions of inset fans of the fan piedmont, and that merge with the basin floor.
- Fast intake** (in tables). The rapid movement of water into the soil.
- Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.
- Fibric soil material (peat).** The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.
- Field moisture capacity.** The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called

*normal field capacity, normal moisture capacity, or capillary capacity.*

**Fill slope.** A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

**Fine textured soil.** Sandy clay, silty clay, or clay.

**Firebreak.** An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of fire fighters and equipment. Designated roads also serve as firebreaks.

**First bottom.** The normal flood plain of a stream, subject to frequent or occasional flooding.

**Flaggy soil material.** Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material is 35 to 60 percent flagstones, and extremely flaggy soil material is more than 60 percent flagstones.

**Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

**Flood plain.** A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

**Fluvial.** Of or pertaining to rivers; produced by river action, as a fluvial plain.

**Foothill.** A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

**Foot slope.** The inclined surface at the base of a hill.

**Forb.** Any herbaceous plant not a grass or a sedge.

**Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.

**Fragile** (in tables). A soil that is easily damaged by use or disturbance.

**Frost action** (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

**Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

**Gilgai.** The microrelief of clayey soils that shrink and swell considerably with changes in moisture content. Usually manifested as a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope.

**Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

**Graded stripcropping.** Growing crops in strips that grade toward a protected waterway.

**Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

**Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

**Gravelly soil material.** Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

**Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

**Ground water.** Water filling all the unblocked pores of underlying material below the water table.

**Gully.** A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

**Gypsum.** A mineral consisting of hydrous calcium sulfate.

**Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

**Hardpan.** A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

**Heavy metal.** Inorganic substances that are solid at ordinary temperatures and are not soluble in water. They form oxides and hydroxides that are basic. Examples are copper, iron, cadmium, zinc, manganese, lead, and arsenic.

**Hemic soil material (mucky peat).** Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

**High-residue crops.** Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.



**Hill.** A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

**Holocene.** The epoch of the Quaternary Period of geologic time, extending from the end of the Pleistocene Epoch (about 10 to 12 thousand years ago) to the present.

**Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. The major horizons of mineral soil are as follows:

*O horizon.*--An organic layer of fresh and decaying plant residue.

*A horizon.*--The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

*E horizon.*--The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

*B horizon.*--The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

*C horizon.*--The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cr horizon.*--Soft, consolidated bedrock beneath the soil.

*R layer.*--Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

**Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.

**Hydrologic soil groups.** Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

**Igneous rock.** Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

**Illuviation.** The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

**Impervious soil.** A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

**Increasers.** Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and less palatable to livestock.

**Infiltration.** The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

**Infiltration capacity.** The maximum rate at which water can infiltrate into a soil under a given set of conditions.

**Infiltration rate.** The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

**Inset fan.** A special case of the flood plain of an ephemeral stream that is confined between fan remnants, basin-floor remnants, ballenas, or closely opposed fan toeslopes.

**Intake rate.** The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2 .....	very low
0.2 to 0.4 .....	low
0.4 to 0.75 .....	moderately low
0.75 to 1.25 .....	moderate
1.25 to 1.75 .....	moderately high
1.75 to 2.5 .....	high
More than 2.5 .....	very high

**Intermittent stream.** A stream, or reach of a stream, that flows for prolonged periods only when it receives groundwater discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

**Intermontane basin.** A generic term for wide structural depressions between mountain ranges that are partly filled with alluvium. They may be drained internally (bolsons) or externally (semi-bolsons).

**Invaders.** On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

**Iron depletions.** Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

**Irrigation.** Application of water to soils to assist in production of crops. Methods of irrigation are:

*Basin.*--Water is applied rapidly to nearly level plains surrounded by levees or dikes.

*Border.*--Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes or borders.

*Controlled flooding.*--Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

*Corrugation.*--Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

*Drip (or trickle).*--Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

*Furrow.*--Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

*Sprinkler.*--Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

*Subirrigation.*--Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

*Wild flooding.*--Water, released at high points, is allowed to flow onto an area without controlled distribution.

**Lacustrine deposit.** Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

**Lagoon.** The nearly level, filled depression behind the longshore bar on a barrier beach.

**Lake plain.** A surface marking the floor of an extinct lake, filled in by well sorted, stratified sediments.

**Lake terrace.** A remnant lake plain surface formed by recessional stands of pluvial lakes, characterized by a broad nearly level surface and a low scarp.

**Lamella.** A thin, generally horizontal layer of fine material illuviated within a very much thicker, coarser, eluviated layer.

**Landform.** Any recognizable form or feature on the earth's surface, having a characteristic shape, and produced by natural causes that provide an empirical description of similar portions of the earth's surface.

**Landscape.** A collection of related, natural landforms.

**Landslide.** The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

**Large stones (in tables).** Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

**Leaching.** The removal of soluble material from soil or other material by percolating water.

**Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.

**Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

**Loamy soil.** Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.

**Loess.** Fine grained material, dominantly of silt-sized particles, deposited by wind.

**Longshore bar.** A narrow, elongate, coarse-textured ridge, built by the wave action of a pluvial lake, that extends parallel to the shore and separated it from a lagoon; both the bar and lagoon are now relict features.

**Low-residue crops.** Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

**Low strength.** The soil is not strong enough to support loads.

**Marl.** An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

**Masses.** Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

**Mean annual increment (MAI).** The average annual increase in volume of a tree during the entire life of the tree.

**Mechanical treatment.** Use of mechanical equipment for seeding, brush management, and other management practices.

**Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.

**Merchantable trees.** Trees that are of sufficient size to be economically processed into wood products.

**Metamorphic rock.** Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

**Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

**Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.

**Miscellaneous area.** An area that has little or no natural soil and supports little or no vegetation.

**Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.

**Moderately deep soil.** A soil that is 20 to 40 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.

**Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

**Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

**Mottling, soil.** Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance--*few*, *common*, and *many*; size--*fine*, *medium*, and *coarse*; and contrast--*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

**Mountain.** A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

**Muck.** Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

**Mudstone.** Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

**Munsell notation.** A designation of color by degrees of three simple variables--hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

**Natric horizon.** A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

**Neutral soil.** A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

**Nodules.** Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

**Nutrient, plant.** Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

**Observed rooting depth.** Depth to which roots have been observed to penetrate.

**Organic matter.** Plant and animal residue in the soil in various stages of decomposition.

**Overstory.** The trees in a forest that form the upper crown cover.

**Oxbow.** The horseshoe-shaped channel of a former meander, remaining after the stream formed a cutoff across a narrow meander neck.

**Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

**Parent material.** The unconsolidated organic and mineral material in which soil forms.

**Parna dune.** An eolian dune built of sand size aggregates of clayey material that commonly occurs leeward of a playa.

**Peat.** Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

**Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pediment.** A gently sloping erosional surface developed at the foot of a receding hill or mountain slope.

**Pedisediment.** A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

**Pedon.** The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

**Percolation.** The downward movement of water through the soil.

**Percs slowly** (in tables). The slow movement of water through the soil adversely affects the specified use.

**Permeability.** The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability."

Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow .....	0.00 to 0.01 inch
Very slow .....	0.01 to 0.06 inch
Slow .....	0.06 to 0.2 inch
Moderately slow .....	0.2 to 0.6 inch
Moderate .....	0.6 inch to 2.0 inches
Moderately rapid .....	2.0 to 6.0 inches
Rapid .....	6.0 to 20 inches
Very rapid .....	more than 20 inches

**Phase, soil.** A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

**pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

**Piedmont slope.** The dominant slope at the foot of a mountain. Main components of the piedmont slope include pediments, alluvial fans, fan piedmonts, fan skirts and inset fans.

**Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

**Pitting** (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

**Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

**Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.

**Plateau.** An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

**Playa.** The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

**Pleistocene.** The epoch of the Quaternary Period of geologic time preceding the Holocene (from approximately 2 million to 10 thousand years ago).

**Plowpan.** A compacted layer formed in the soil directly below the plowed layer.

**Pluvial.** Relating to former periods of abundant rains.

**Ponding.** Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

**Poor filter** (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

**Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

**Poor outlets** (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

**Potential native plant community.** See Climax plant community.

**Potential rooting depth (effective rooting depth).** Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

**Prescribed burning.** Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

**Productivity, soil.** The capability of a soil for producing a specified plant or sequence of plants under specific management.

**Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.

**Proper grazing use.** Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

**Quartzite, metamorphic.** Rock consisting mainly of quartz that formed through recrystallization of quartz-rich sandstone or chert.

**Quaternary.** The period of geologic time, extending from about 2 million years ago to the present and comprising two epochs, the Pleistocene (Ice Age) and Holocene (Recent).

**Quartzite, sedimentary.** Very hard but unmetamorphosed sandstone consisting chiefly of quartz grains.

**Range condition.** The present composition of the plant community on a range site in relation to the potential natural plant community for that site. Range condition is expressed as excellent, good, fair, or poor on the basis of how much the present plant community has departed from the potential.

**Rangeland.** Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

**Range site.** An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

**Reaction, soil.** A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid .....	less than 3.5
Extremely acid .....	3.5 to 4.4
Very strongly acid .....	4.5 to 5.0
Strongly acid .....	5.1 to 5.5
Moderately acid .....	5.6 to 6.0
Slightly acid .....	6.1 to 6.5
Neutral .....	6.6 to 7.3
Slightly alkaline. (mildly alkaline) .....	7.4 to 7.8
Moderately alkaline .....	7.9 to 8.4
Strongly alkaline .....	8.5 to 9.0
Very strongly alkaline .....	9.1 and higher

**Redoximorphic concentrations.** Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

**Redoximorphic depletions.** Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

**Redoximorphic features.** Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

**Reduced matrix.** A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly

continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

**Regeneration.** The new growth of a natural plant community, developing from seed.

**Regolith.** The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

**Relict stream terrace.** One of a series of platforms in or adjacent to a stream valley that formed prior to the current stream system.

**Relief.** The elevations or inequalities of a land surface, considered collectively.

**Residuum (residual soil material).** Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

**Rill.** A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

**Riverwash.** Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

**Road cut.** A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

**Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

**Rock outcrop.** Exposures of bare bedrock other than lava flows and rock-lined pits.

**Rooting depth** (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

**Root zone.** The part of the soil that can be penetrated by plant roots.

**Rubble land.** Areas that have more than 90 percent of the surface covered by stones or boulders. Voids contain no soil material and virtually no vegetation other than lichens. The areas commonly are at the base of mountain slopes, but some are on mountain slopes as deposits of cobbles, stones, and boulders left by Pleistocene glaciation or by periglacial phenomena.

**Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is

called groundwater runoff or seepage flow from ground water.

**Saline soil.** A soil containing soluble salts in an amount that impairs the growth of plants. A saline soil does not contain excess exchangeable sodium.

**Salinity.** The electrical conductivity of a saline soil. It is expressed, in millimhos per centimeter, as follows:

Nonsaline .....	0 to 2
Very slightly saline .....	2 to 4
Slightly saline .....	4 to 8
Moderately saline .....	8 to 16
Strongly saline .....	More than 16

**Salty water** (in tables). Water that is too salty for consumption by livestock.

**Sand.** As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

**Sand sheet.** A large, irregularly shaped, surficial mantle of eolian sand.

**Sandstone.** Sedimentary rock containing dominantly sand-sized particles.

**Sandy soil.** Sand or loamy sand.

**Sapric soil material (muck).** The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

**Saprolite.** Unconsolidated residual material underlying the soil and grading to hard bedrock below.

**Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

**Sawlogs.** Logs of suitable size and quality for the production of lumber.

**Scarification.** The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

**Scribner's log rule.** A method of estimating the number of board feet that can be cut from a log of a given diameter and length.

**Second bottom.** The first terrace above the normal flood plain (or first bottom) of a river.

**Sedimentary rock.** Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate,

formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

**Seepage** (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

**Semi-bolson**. An intermontane basin that is drained externally by an intermittent stream.

**Sequum**. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

**Series, soil**. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

**Shale**. Sedimentary rock formed by the hardening of a clay deposit.

**Shallow soil**. A soil that is 10 to 20 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Sheet erosion**. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

**Shelterwood system**. A forest management system requiring the removal of a stand in a series of cuts so that regeneration occurs under a partial canopy. After regeneration, a final cut removes the shelterwood and allows the stand to develop in the open as an even-aged stand. The system is well suited to sites where shelter is needed for regeneration, and it can aid regeneration of the more intolerant tree species in a stand.

**Shoulder slope**. The uppermost inclined surface at the top of a hillside. It is the transition zone from the back slope to the summit of a hill or mountain. The surface is dominantly convex in profile and erosional in origin.

**Shrink-swell** (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

**Shrub-coppice dune**. A small dune that forms around shrubs or small trees.

**Silica**. A combination of silicon and oxygen. The mineral form is called quartz.

**Silt**. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural

class, soil that is 80 percent or more silt and less than 12 percent clay.

**Siltstone**. Sedimentary rock made up of dominantly silt-sized particles.

**Similar soils**. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

**Sinkhole**. A depression in the landscape where limestone has been dissolved.

**Site class**. A grouping of site indexes into five to seven production capability levels. Each level can be represented by a site curve.

**Site curve (50-year)**. A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for the range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 50 years old or are 50 years old at breast height.

**Site curve (100-year)**. A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for a range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 100 years old or are 100 years old at breast height.

**Site index**. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

**Skid trails**. Pathways along which logs are dragged to a common site for loading onto a logging truck.

**Slash**. The branches, bark, treetops, reject logs, and broken or uprooted trees left on the ground after logging.

**Slickens**. Accumulations of fine-textured material, such as material separated in placer-mine and ore-mill operations. Slickens from ore mills commonly consist of freshly ground rock that has undergone chemical treatment during the milling process.

**Slickensides**. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of

blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

**Slick spot.** A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

**Slippage** (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

**Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, the following slope classes are recognized:

Nearly level .....	0 to 2 percent
Gently sloping .....	2 to 4 percent
Moderately sloping .....	4 to 8 percent
Strongly sloping .....	8 to 15 percent
Moderately steep .....	15 to 30 percent
Steep .....	30 to 50 percent
Very steep .....	50 to 75 percent
Extremely steep .....	75 percent and higher

**Slope** (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

**Slow intake** (in tables). The slow movement of water into the soil.

**Slow refill** (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

**Small stones** (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

**Sodic (alkali) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

**Sodicity.** The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of  $\text{Na}^+$  to  $\text{Ca}^{++} + \text{Mg}^{++}$ . The degrees of sodicity and their respective ratios are:

Very slight .....	5-12:1
Slight .....	13-30:1
Moderate .....	31-45:1
Strong .....	46-90:1
Very strong .....	more than 90:1

**Soft bedrock.** Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

**Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

**Soil separates.** Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand .....	2.0 to 1.0
Coarse sand .....	1.0 to 0.5
Medium sand .....	0.5 to 0.25
Fine sand .....	0.25 to 0.10
Very fine sand .....	0.10 to 0.05
Silt .....	0.05 to 0.002
Clay .....	less than 0.002

**Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

**Species.** A single, distinct kind of plant or animal having certain distinguishing characteristics.

**Stone line.** A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

**Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

**Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.

**Strath terrace.** A surface cut formed by the erosion of hard or semiconsolidated bedrock and thinly mantled with stream deposits.

**Stream channel.** The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.



**Stream terrace.** One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

**Stripcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing and water erosion.

**Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are: *platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

**Stubble mulch.** Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

**Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.

**Subsoiling.** Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

**Substratum.** The part of the soil below the solum.

**Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.

**Summer fallow.** The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

**Summit.** A general term for the top, or highest level, of an upland feature, such as a hill or mountain. It commonly refers to a higher area that has a gentle slope and is flanked by steeper slopes.

**Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer" or the "Ap horizon."

**Surface soil.** The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

**Tailwater.** The water directly downstream of a structure.

**Talus.** Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

**Taxadjuncts.** Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

**Terrace.** An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field is generally built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

**Terrace (geologic).** A step-like surface, ordinarily flat or undulating, bordering a river, a lake, or the sea representing a former flood plain.

**Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

**Thin layer** (in tables). Otherwise suitable soil material too thin for the specified use.

**Till plain.** An extensive area of nearly level to undulating soils underlain by glacial till.

**Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

**Toe slope.** The outermost inclined surface at the base of a hill; part of a foot slope.

**Too arid** (in tables). The soil is dry most of the time, and vegetation is difficult to establish.

**Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to

topdress roadbanks, lawns, and land affected by mining.

**Toxicity** (in tables). Excessive amount of toxic substances, such as sodium or sulfur, that severely hinder establishment of vegetation or severely restrict plant growth.

**Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

**Trafficability.** The degree to which a soil is capable of supporting vehicular traffic across a wide range in soil moisture conditions.

**Tread.** The relatively flat terrace surface that was cut or built by stream or wave action.

**Tuff.** A compacted deposit that is 50 percent or more volcanic ash and dust.

**Understory.** Any plants in a forest community that grow to a height of less than 5 feet.

**Unstable fill** (in tables). Risk of caving or sloughing on banks of fill material.

**Upland** (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

**Valley.** An elongated depressional area primarily developed by stream action.

**Valley fill.** In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

**Variation.** Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

**Very deep soil.** A soil that is more than 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Very shallow soil.** A soil that is less than 10 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Water bars.** Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

**Waterspreading.** Diverting runoff from natural channels by means of a system of dams, dikes, or ditches and spreading it over relatively flat surfaces.

**Water supplying capacity.** The total amount of water available in the soil for plant growth in a normal year from precipitation and from runoff from higher areas. Runoff and water lost to deep percolation are not included.

**Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

**Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

**Wilting point (or permanent wilting point).** The moisture content of soil, on an oven-dry basis, at which a plant (specifically, a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

**Windthrow.** The uprooting and tipping over of trees by the wind.





United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

In cooperation with  
United States  
Department of the  
Interior, Bureau of Land  
Management, and Bureau of  
Indian Affairs, and  
University of Nevada  
Agricultural  
Experiment Station

# **Soil Survey of Churchill County Area, Nevada**

## **Parts of Churchill and Lyon Counties**

### **Part II**

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# **Soil Survey of Churchill County Area, Nevada Parts of Churchill and Lyon Counties**

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This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Interpretative ratings help engineers, planners, and others to understand how soil properties influence important nonagricultural uses, such as building site development and construction materials. The ratings indicate the most restrictive soil features affecting the suitability of the soils for these uses.

Soils are rated in their natural state. No unusual modification of the soil site or material is made other than that which is considered normal practice for the rated use. Even though soils may have limitations, it is important to remember that engineers and others can modify soil features or can design or adjust the plans for a structure to compensate for most of the limitations. Many of these practices, however, are costly. The final decision in selecting a site for a particular use generally involves weighing the costs of site preparation and maintenance.

Planners and others using soil survey information can evaluate the effect of specific uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, trees, and shrubs.



# Crops and Pasture

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General management needed for crops and pasture is suggested in this section. The system of land capability classification used by the Natural Resources Conservation Service is explained. The estimated yields of the main crops and pasture plants are listed for each soil in table 5 at the back of this publication.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units" in Part I of this Publication and in the "Soil Properties" portion of Part II. Specific information can be obtained from the local office of the Natural Resources Conservation Service or Cooperative Extension.

## Yields per Acre

The average yields per acre that can be expected of the principal irrigated crops under a high level of management are shown in table 5, "Land Capability and Yields per Acre of Crops." In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-

yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or Cooperative Extension can provide information about the management and productivity of the soils for those crops.

## Pasture and Hayland Interpretations

Under good management, proper grazing is essential for the production of high quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often provided in animal unit months (AUM), the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Information about forage yields other than those shown in table 5, "Land Capability and Yields per Acre of Crops" can be provided by the local office of the Natural Resources Conservation Service or Cooperative Extension.

## Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

In the capability system, as described in "Land Capability Classification" (5), soils generally are grouped at three levels: capability class, subclass, and unit. These levels indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, small grain, cotton, hay, and field-grown vegetables. Only class and subclass are used in this survey.

*Capability classes*, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use.

If properly managed, soils in classes I, II, III, and IV are suitable for the mechanized production of commonly grown field crops and for pasture and woodland. The degree of the soil limitations affecting the production of cultivated crops increases progressively from class I to class IV. The limitations can affect levels of production and the risk of permanent soil deterioration caused by erosion and other factors.

Soils in classes V, VI, and VII are generally not suited to the mechanized production of commonly grown field crops without special management, but they are suitable for plants that provide a permanent cover, such as grasses and trees. The severity of the soil limitations affecting crops increases progressively from class V to class VII. The local office of the Cooperative Extension or Natural Resources Conservation Service can provide guidance on the use of these soils as cropland.

Areas in class VIII are generally not suitable for crops, pasture, or woodland without a level of management that is impractical. These areas may

have potential for other uses, such as recreational facilities and wildlife habitat.

*Capability subclasses* indicate the dominant limitations in the class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c* shows that the chief limitation is a climate that is very cold or very dry.

There are no subclasses in class I because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use mainly to pasture, rangeland, woodland, wildlife habitat, or recreation.

The irrigated capability classification of each farmland map unit is given in table 5, "Land Capability and Yields per Acre of Crops."

## Erosion Factors

Soil erodibility factors Kw and Kf quantify the susceptibility of soil to detachment by water. A wind erodibility group (WEG) is a grouping of soils that have similar properties affecting their resistance to soil blowing. The Wind Erodibility Index (I) is based on the WEG and is used in the wind erosion equation. Soil erodibility factors Kw and Kf are used in the Revised Universal Soil Loss Equation. The procedure for predicting soil loss is useful in guiding the selection of soil and water conservation practices.

## Soil Erodibility Factors Kw and Kf

Factor Kw shows the erodibility of the whole soil, and factor Kf shows the erodibility of only the fine-earth fraction, the material less than 2.0 millimeters in diameter. The soil erodibility factor indicates the susceptibility of a soil to sheet and rill erosion by water. The soil properties that influence erodibility are those that affect the infiltration rate, the movement of water through the soil, and the water storage capacity of the soil and those that allow the soil to resist dispersion, splashing, abrasion, and the

transporting forces of rainfall and runoff. The most important soil properties are the content of silt plus very fine sand, the content of sand coarser than very fine sand, the content of organic matter, soil structure, and permeability.

### **Wind Erodibility Groups**

Soils are assigned wind erodibility groups on the basis of the properties of the surface layer. The properties that are most important with respect to soil blowing are soil texture, content of organic matter, calcium carbonate, reaction, content of rock fragments, and aggregate stability. Wind erodibility is inversely related to the percentage of dry surface soil aggregates larger than 0.84 millimeter in diameter. From this percentage, the wind erodibility index factor (I) is determined.

### **Soil Loss Tolerance (T) Factor**

The annual Soil Loss Tolerance (T) is an estimate of

the maximum rate of erosion that can occur without affecting crop productivity. The T factor is expressed in tons of soil loss per acre per year. Values of 1 to 5 are used. T values are assigned according to properties of limiting subsurface soil layers. The designation of a limiting layer implies that the material above the layer has more favorable properties for crop production. The criteria for assigning T are based on the severity of physical or chemical properties of subsurface layers, the climatically influenced properties of soil moisture and temperature, the economic feasibility of utilizing management practices to overcome limiting layers or conditions, and the depth to the limiting layer.

Additional information about wind erodibility groups and I, Kw, Kf, and T factors can be obtained from local offices of the Natural Resources Conservation Service or Cooperative Extension.



# Rangeland And Grazeable Woodland Resource Management

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In this soil survey report, the term "rangeland" refers to a kind of land rather than a land use. Areas of rangeland provide many important resource values. They act as vast watersheds and provide habitat for wildlife, livestock forage, and opportunities for recreation. The resource values of rangeland are intricately related to each other and are often directly affected by rangeland management. Because of the interrelationships among rangeland resources, rangeland managers should consider all resource values when planning range improvements.

About 95 percent of the acreage in this survey area is rangeland, or grazeable forest land. Livestock grazing is the principal agricultural use of the rangeland. Livestock operations are mostly cow-calf or cow-calf-sheep enterprises. Ranches range from a few hundred to several thousands acres in size. They rely heavily on permitted use of public lands. Most of the rangeland within the survey area is administered by the Bureau of Land Management. The Bureau of Indian Affairs has management responsibility for the rangeland within Indian reservations.

## Soil-Site Correlation

During the course of this soil survey, ecological sites were correlated with the soils identified within the survey area. These correlations are based on the current understanding of soil-plant-climate relationships in the survey area. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of range plants. Soil reaction, content of salts or lime, and topographic position are also important. The relationship of climate to vegetation and soils is considered in the classification of soils and in soil mapping criteria. In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. Ecological sites can

generally be determined from soil maps and map unit legends developed for the survey area.

## Range Condition

Mining is the major industrial use of rangeland in the survey area and has played an important role in the history of the area. During the mining booms of the 1860's, herds of cattle, sheep, oxen, horses, and burros were brought to Churchill County to be used as a source of power and feed for the developing mining communities. Heavy grazing pressure during these boom periods depleted native stands of forage throughout much of the survey area.

The early devastation of rangeland plant communities through uncontrolled livestock grazing ended long ago, but severely depleted areas still reflect the abuses of early settlement. In the most severely disturbed areas, palatable shrubs generally have been replaced by less desirable shrubs and many native perennial grasses and forbs have been replaced by alien or introduced annual grasses and forbs. Recovery of the plant community has been most evident where previous abuses were limited. The greater the level of deterioration, the longer the period of recovery. Although present-day rangeland production and plant diversity in the survey area are generally less than optimal, the overall condition of the rangeland is much improved from what was common in the early 1900's.

Range condition is determined by a comparison of the present plant community with the natural potential plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential plant community, the higher the range condition. Range condition is an ecological rating only. It does not have a specific meaning that pertains to the present plant community for a given use. Ratings of range condition alone do not indicate whether the present plant community is improving or deteriorating in

relation to its potential. The trend in range condition is a measure of the direction of change in the condition. It is an expression of the effects of current use. The present range condition is a reflection of the accumulated effects of past use. Once the potential plant communities have been identified and the present range condition has been determined, monitoring the trend in range condition over time can indicate whether management objectives are being met.

## Rangeland Management

Range management requires a knowledge of the kinds of soil and of the natural potential plant communities the soils in a given area can support. It also requires an evaluation of the present range condition. For most rangeland plant communities, good management can improve the present condition and productivity of the range and can help to prevent accelerated erosion. Proper management of rangeland depends on many factors. The season of grazing use, the kind of grazing animal, the intensity and distribution of grazing, and the range resource potential are important management considerations. Multiple-use management that meets present and future needs requires extensive knowledge of the capabilities and limitations of the range resources. An understanding of the soil properties and dynamics of native plant communities is fundamental in applying ecological principles to the evaluation and management of rangeland.

Generally, the objective of range management is to manage grazing so that the plants growing on a site are about the same in kind and amount as the natural potential plant community for that site. Such management generally results in the optimum production of vegetation, conservation of water, and control of erosion. To meet a special need or a specific use, however, it may be desirable to manage for a plant community other than the potential plant community for the site. Care must always be taken not to increase the susceptibility to erosion. Future uses and the relative ability of given sites to respond to management should be considered if the management objective is to establish a plant community other than the potential plant community.

Desirable forage plants of many plant communities within the survey area have been greatly depleted or even eliminated by excessive and untimely grazing. Generally, perennial grasses have decreased in abundance and woody plants have increased. The

productivity of forage plants is below the production potential on many sites. Uneven livestock distribution has resulted in both overuse and underuse of the native forage.

An increase in the abundance and size of shrubs and an extensive invasion of cheatgrass (an introduced annual grass) have reduced the amount of soil moisture and nutrients available to perennial grasses and forbs. In areas where the range condition has not excessively deteriorated and an adequate population of desirable perennial grasses and forbs is available to respond to a release from plant competition, brush management can be effective in reversing the trend toward an increasing dominance of woody vegetation.

Abusive grazing of riparian vegetation by livestock can reduce water quality, eliminate streamside shrubs, cause soil compaction, accelerate erosion, and break down streambanks. Proper management of the rangeland in the survey area requires that special attention be given to riparian zones. Fortunately, riparian communities often respond to improved livestock management more rapidly than upland plant communities. Grazing treatments in riparian areas vary with the stability of the riparian plant community and the condition of the adjacent upland plant communities.

## Rangeland Seeding

Rangeland seeding may be required following the removal of woody vegetation in areas where desirable understory plants are scarce or are not included in the present plant community. Revegetation also may be necessary for critical area treatment following a wildfire or other major disturbance. Maximum grazing capacity can be achieved in seeded stands where the objective of management is uniform grazing of the stands and prevention of the concentration of livestock. Additional water developments and fencing may be required to meet management objectives.

The success of range seeding depends on the amount of moisture available during the growing season. Even in areas where adapted species are planted and improved seeding and land treatment techniques are applied, the success of range seeding is strongly influenced by rainfall. The distribution and amount of precipitation in the survey area fluctuate widely from one year to the next. Years of below normal precipitation are relatively frequent, and the risk of seeding failure caused by the unpredictability of climate should be acknowledged



in addition to critical soil properties that affect seeding success.

Each soil in the survey area is rated in the table "Suitability for Rangeland Seeding." The criteria used in the development of these ratings are available from the local Nevada office of the Natural Resources Conservation Service. Where critical area treatment is necessary, providing a plant cover that helps to prevent accelerated erosion may be advantageous on soils that are poorly suited to range seeding. The plants that are suited to the soils in the area to be treated should be selected for seeding.

More specific management concerns are addressed under the heading "Plant Communities in Churchill County," later in this section. Additional information about rangeland management can be obtained from local offices of the Natural Resources Conservation Service or Cooperative Extension.

## Wildlife Considerations

Reducing the extent of brush cover can benefit many game and nongame wildlife species where the habitat needs of those animals are properly identified and planned for in the manipulation of vegetation. For instance, extensive areas dominated by big sagebrush provide marginal habitat for pronghorn antelope. The habitat can be improved by measures that decrease the density and height of the sagebrush. The habitat for mule deer can be improved by removing big sagebrush and thus enhancing the diversity of understory grasses and forbs or increasing the production of green forage on transitional range that has an excessive cover of shrubs.

For other species, however, brush removal may be detrimental. Sage grouse is a habitat-specific bird, relying primarily on sagebrush to meet its life requirements. Plans for the manipulation of sagebrush stands on range inhabited by sage grouse should provide for the maintenance of suitable grouse habitat, especially nesting habitat near strutting grounds. The optimum nesting habitat for sage grouse is one in which the crown cover of sagebrush that is less than 30 inches high is 20 to 40 percent. Treatment of the sagebrush that reduces the cover from 40 to 20 percent may not seriously degrade the nesting habitat and commonly improves the quality of forage for sage grouse.

In an assessment of how the manipulation of vegetation affects wildlife, "edge" habitat is an important consideration. The structure and

dominance of plants that remain after manipulation differ with the method of treatment. Fire removes all of the vegetation, including the skeletons or woody portions of shrubs, and thus eliminates the structure of woody vegetation from the treated area.

Prescribed burning may enhance the habitat for a number of wildlife species. Mule deer and many nongame species select recently burned areas for feeding. Brush treatment with herbicides leaves the dead skeletons of shrubs and retains the shrub structure. Herbicides may kill broad-leaved forbs in the shrub understory, which are staples in the diet of many game and nongame species. Chaining and, to a lesser degree, brush beating change the vegetative structure from tree/shrub or shrub to grassland, and the residue they leave on the ground creates habitat for small mammals.

Many wildlife species in the survey area depend on riparian plant communities during much of the year. These plant communities support wildlife not common to desert ecosystems, such as short-eared owls, Pacific tree frogs, and long-tailed weasels. Riparian communities also provide islands of habitat in desert environments for migrating birds. Nuthatches, warblers, and other species that nest in forest ecosystems migrate to desert riparian zones in spring and fall.

Livestock water developments can be beneficial to wildlife if the water is available when the wildlife species occupy the area. Forage for wildlife can be enhanced if adapted forbs are included in a rangeland seeding.

More specific wildlife management concerns are addressed under the heading "Plant Communities of Churchill County." Additional information about wildlife management can be obtained from local offices of the Natural Resources Conservation Service, Cooperative Extension, or Nevada Division of Wildlife.

## Plant Communities of Churchill County

A rangeland ecological site is a distinctive kind of rangeland that differs from other kinds of rangeland in its ability to produce a characteristic natural plant community. An ecological site is the product of all environmental factors responsible for its development. It can support a native plant community typified by an association of species that differs from the potential plant community of other ecological sites in the kind or proportion of species or in total production. Disturbances, such as

drought, fire, and grazing by native fauna, and the damage caused by insects and disease are recognized as natural factors in the development of native plant communities.

The appendix in the section "Rangeland Plants and Woodland Understory" shows the rangeland plants and woodland understory for each soil and contrasting inclusion in the detailed soil map units, the rangeland or woodland ecological site, the common plant name and scientific plant symbol for the characteristic vegetation, the average percent composition for each species in the potential plant community, the rangeland or woodland ecological site, and the total annual production of vegetation in favorable, normal, and unfavorable years. The characteristic vegetation, which consists of the grasses, forbs, shrubs, and immature trees that make up most of the potential plant community for each soil, is listed by common name. For rangeland, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The amount that can be used as forage depends on the kinds of grazing animals, the grazing season, and the availability of forage. Many plants, trees, and shrubs are inaccessible to foraging animals. For woodland, the percentage of the total annual production is not given because of a wide variation of production under different tree canopies. The presence of a plant species in the understory vegetation is shown by an "X" in the composition section of the table.

Total potential production is the amount of vegetation that can be expected to grow annually on well managed rangeland or woodland that supports the potential natural community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's production of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, above average amounts and optimum timing of precipitation during periods of warm temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture.

Riparian areas or meadows are interspersed throughout the survey area. Riparian vegetation grows on the flood plains along perennial streams. Stringer meadows are along spring-fed stream channels where moisture is available to plants

throughout most of the growing season. Meadow vegetation also grows on the periphery of seeps and springs. Although they make up a small acreage in the survey area, the riparian zones are important because they provide free water, which improves the productivity of the riparian vegetation and lengthens the growing season of the vegetation. The zones are characterized by diverse plant species and a structural diversity of vegetation. The zones along stream channels are typically linear. The linear nature of the zones maximizes the edge effect between the zones and the adjacent uplands. An "edge," or ecotone, is a transition between plant communities or a joining of different vegetative structures within plant communities. It commonly is richer in wildlife than either of the adjoining communities.

Churchill County is in the northwestern part of the Basin and Range Physiographic Province. The major plant associations in the survey area typify the general zonation of vegetation common in the Great Basin Region.

Valley floors and the lower piedmont slopes are dominated by salt-desert shrub plant communities where the mean annual precipitation is less than 8 inches.

Salt-desert shrub communities normally reflect either a climatically dry environment where the mean annual precipitation is less than 8 inches or physiologically dry soil conditions. High concentrations of salts that interfere with the uptake of water by plants can create physiologically dry soil conditions. Representative shrubs of the salt-desert shrub communities are shadscale, bud sagebrush, Bailey greasewood, winterfat, and Douglas rabbitbrush. The common grasses include Indian ricegrass, bottlebrush squirreltail, Sandberg bluegrass, and desert needlegrass.

The salt-desert shrub plant communities in the survey area include stands dominated by a single shrub species and stands that support relatively heterogeneous mixtures of shrubs and grasses. The vegetation is generally sparse, normally covering less than 20 percent of the surface. Wind erosion and water erosion are hazards because of the naturally sparse plant cover in most areas. The interspaces between plants in salt-desert shrub communities commonly are stabilized by surface pavements of rock fragments, by a puddled and crusted soil surface, or by microphytic (algae) surface crusts. These protective features can be damaged by livestock or off-road vehicle traffic.

Salt-desert shrub plant communities are most valuable as winter range for livestock. They can

produce high-quality winter forage and are usually subject to only light snowfall. Most of the desirable forage species in these communities are adversely affected by grazing in late winter (March and April), heavy use, or both. Where native rangeland communities are grazed in winter, an emergency supply of feed should be readily available to carry livestock through periods of unusually severe weather.

Properly regulated grazing management can enhance the long-term productivity of salt-desert shrub plant communities. This management includes deferred grazing during critical growth periods in late winter, rotational grazing, and control of the intensity and season of use. Fencing, herding, water hauling, and controlling livestock access to watering facilities can achieve a better distribution of grazing. Because of the harsh environment of the salt-desert shrub zone, manipulation of vegetation and revegetation projects generally are not advisable.

Salt-desert shrub communities provide habitat for a wide variety of nongame species, including whiptail lizards, antelope ground squirrels, loggerhead shrikes, and Pacific rattlesnakes. Plant communities that are dominated by shadscale or winterfat and associated forbs and grasses provide important winter range for pronghorn antelope. Fencing can deter the migration of pronghorn antelope because these animals commonly do not jump. As a result, the lower wire of the fences should be high enough for antelope to crawl under. Where feasible, the fence lines should be routed so that they cause the least disruption to antelope travel. Livestock water developments are beneficial to antelope and other wildlife if the water is available when the animals occupy the area. Few mule deer use salt-desert shrub communities, which generally are unimportant in deer management. Feral horses use these communities in winter.

Plant communities that reflect extra moisture conditions are adjacent to valley floor playas. These areas may have a high water table during periods of runoff. Black greasewood, shadscale, inland saltgrass, and basin wildrye are the characteristic plants on these sites.

Plant communities that are dominated by black greasewood provide thermal cover for many species of wildlife but have limited value for big game. Because of its spines and coarse structure, black greasewood provides protective cover to nesting birds and small mammals. Although this species is not a preferred forage plant for livestock, cattle and sheep eat the succulent spring growth. On late fall and winter ranges, the fruit of black greasewood

and shadscale provides nutritious and palatable feed. The soluble oxalates in black greasewood may be harmful to livestock, especially sheep, if the new growth is excessively grazed in spring.

As snow melts in spring, runoff commonly drains into valley floor basins. It remains for short periods, providing nesting and feeding habitat for some waterfowl. Playas containing water in spring are important resting places for migrating waterfowl. Sand dunes formed through the deposition of windblown sediment are commonly on the leeward side of the playas in this survey area. Although of limited extent, partially stabilized sand dunes provide important habitat for both predator and prey vertebrate wildlife. Kangaroo rats, kit foxes, and bobcats inhabit the sand dunes.

Sagebrush-grass plant communities are at the middle elevations in the survey area. The average annual precipitation at these elevations commonly is between 8 and 10 inches.

Wyoming big sagebrush, Lahontan sagebrush (a newly recognized subspecies of low sagebrush), and, to a lesser extent, basin big sagebrush are the dominant woody sagebrush plants in this zone. Cool-season perennial grasses are potentially the dominant herbaceous plants in the sagebrush-grass plant communities. Thurber needlegrass, Indian ricegrass, bottlebrush squirreltail, and Sandberg bluegrass are important cool-season bunch grasses. Grazing pressure has been severe on the sagebrush-grass plant communities at these elevations. These plant communities are the first to begin growth, or "greenup," during the warming periods of early spring and have traditionally been used for spring grazing by livestock. Close grazing spring after spring will eventually eliminate the perennial understory of grasses and forbs.

Grazing management practices can enhance the long-term productivity of sagebrush-grass communities. These practices include deferred grazing during critical growth periods in spring, rotational grazing, and control of the intensity and season of use. Fencing, herding, water hauling, and controlling livestock access to watering facilities can achieve a better distribution of grazing and facilitate grazing management.

Very few sources of perennial water are available in the sagebrush-grass zone at the lower elevations. Therefore, water developments and watering facilities are key elements in grazing management. Also, they can be of significant value to wildlife. Where the range condition has not deteriorated excessively and an adequate population of desirable perennial grasses and forbs is available to respond to

a release from plant competition, brush management can greatly enhance the production of forage for livestock and wildlife.

The selection of plants available for rangeland seeding in the 8- to 10-inch precipitation zone is limited. Suitable species that are tolerant of early spring grazing, however, can be seeded. These species can play a key role in the management of grazing on the adjacent native sagebrush-grass and salt-desert shrub plant communities. Years of below normal precipitation are relatively frequent in this zone. Thus, the factors to be considered in managing rangeland seeding include the risk of seeding failure caused by climate.

Although the sagebrush-grass communities at the middle elevations may provide transitional spring range to pronghorn antelope moving from winter to summer ranges, plant communities that are dominated by big sagebrush are not heavily used by the antelope. Fencing can deter migration of the antelope because these animals commonly do not jump. As a result, the lower wire of the fences should be high enough for the antelope to crawl under. Where feasible, the fence lines should be routed so that they cause the least disruption to antelope travel. Livestock water developments are beneficial to wildlife, especially deer and antelope, if the water is available when the animals are in the area.

During severe winters in areas of the sagebrush-grass communities at the lower elevations, sage grouse may feed on sagebrush that has not been covered by snow. Heavy snow at the higher elevations forces chukar partridge to move into these areas in search of food. The sagebrush-grass communities at the lower elevations are used primarily by mule deer and feral horses as winter range or as transitional range in spring. Spring grazing by livestock in areas used by deer as winter range should be managed so that the turn out of livestock is delayed until after spring "greenup" and the migration of most of the deer.

Sagebrush-grass communities are at intermediate elevations with average annual precipitation between 10 and 14 inches.

Wyoming big sagebrush dominates the shrub canopy of the mid-elevation plant communities on the warmer, drier exposures. Basin big sagebrush is most common on the deeper soils at the lower elevations in this precipitation zone. Mountain big sagebrush is prevalent on the north aspects at the lower elevations of the zone and grows on all aspects at the higher elevations. Low sagebrush is the dominant dwarf sagebrush at the mid and upper

elevations in the survey area. Bluebunch wheatgrass, Thurber needlegrass, Canby bluegrass, Sandberg bluegrass, and basin wildrye are the major perennial grasses associated with these mid-elevation sagebrush-grass communities. Antelope bitterbrush is an important shrub in many plant communities at these elevations.

The mid-elevation sagebrush-grass communities are suitable for grazing by livestock in summer and fall. Deferred grazing during critical growth periods in spring and early summer, rotational grazing, and control of the intensity and season of use can enhance the long-term productivity of these communities. Fencing, herding, and strategically locating livestock watering facilities help to achieve a better distribution of grazing and facilitate grazing management. Relatively few sources of perennial water are available in areas of the mid-elevation sagebrush-grass zone. As a result, water developments and watering facilities are key elements in grazing management and can be of significant value to wildlife.

Wyoming big sagebrush communities at mid elevations are used primarily as winter range by mule deer. They commonly provide habitat for Brewer's sparrow, black-tailed jackrabbits, and sagebrush lizards. They provide wintering areas for sage grouse. Low sagebrush communities provide important summer range for pronghorn antelope and brood-rearing habitat for sage grouse. Livestock water developments can be beneficial to wildlife, especially deer and antelope, if the water is available when the animals are in the area. Mountain big sagebrush and low sagebrush communities provide spring, summer, and fall range for mule deer and feral horses.

Seasonal grazing by livestock removes old grass residue and exposes the regrowth of succulent green stems and leaves that provide food for mule deer. The steep rock-faced cliffs common to these mid elevations have ledges, joints, cracks, and occasional caves and thus provide safe sites for birds and small mammals to nest and rear their young. The common nongame species are sage thrasher, the Great Basin gopher snake, and desert mouse. Areas of exposed lava flow rock, natural breaks in the cliffs, and the associated talus commonly are used as travel lanes by wildlife, including mule deer.

Brush management practices can be very effective in increasing the production of native forage in the mid-elevation sagebrush-grass zone. They can be beneficial to wildlife as well as livestock. Opening up large, homogeneous stands of sagebrush commonly

improves the habitat for wildlife, such as mule deer and pronghorn antelope. Rangeland seeding may be required following the removal of woody vegetation where desirable understory plants are scarce or are not included in the present plant community. A number of forbs and grasses are suitable for dryland seeding in the 10-to 14-inch precipitation zone. Including suitable forbs in the seeding mixture helps to provide additional forage for wildlife, such as pronghorn antelope, mule deer, and sage grouse.

Pinyon and juniper plant communities are at mid-elevations in the survey area. Local expansion of pinyon or juniper from woodland sites to the adjacent rangeland is common. The invasion of juniper and pinyon into sagebrush-grass communities has been attributed to overgrazing, a scarcity of naturally recurring fires, and climatic conditions. Young trees are readily killed by fire. The loss of fine fuel to carry fire and, to a lesser extent, fire control have limited the frequency and extent of natural fires in the sagebrush-grass zone. This reduction in the frequency of fires has allowed seedlings to become established in increasing numbers on sites that at one time supported virtually no trees.

Livestock commonly concentrate on the woodland sites, taking advantage of the shade and shelter provided by the tree overstory. These sites also provide habitat for nongame wildlife species, including the bushy-tailed woodrat, the blue-grey gnat-catcher, and the American kestrel; thermal cover for mule deer; and habitat for small mammals and birds.

Areas that have a heterogeneous mixture of vegetative types, including grassland, low shrub, tall shrub, and tree-shrub communities, generally provide an optimum diversity of wildlife habitat. These types of vegetative complexes are common in the sagebrush-grass zones at the intermediate and upper elevations. Moderate browsing by cattle on antelope bitterbrush in fall can enhance the vigor and growth of the bitterbrush, which is later available for grazing by mule deer and antelope.

Stringer meadows are along spring-fed stream channels in the sagebrush-grass zones at the intermediate and upper elevations. Meadow vegetation also grows on the periphery of seeps and springs. Wet meadows adjacent to sagebrush stands are important as brood-rearing areas for sage grouse. During the first weeks after leaving the nest, sage grouse chicks eat mainly insects (ants and beetles) and the succulent forbs that are common in wet meadows. Grazing of the meadows by cattle can improve the quality of feed for sage grouse if a period of regrowth is provided for the key forb

species. Grazing increases the succulence of the forbs by interrupting the maturation of the plant tissues. The succulent or young leaf tissue is higher in protein and lower in fiber than mature tissue. As they seek sources of succulent forbs, sage grouse select meadows that have been grazed by cattle. Sage grouse chicks find food and cover in properly grazed meadows, which appear patchy because of different stubble heights remaining after livestock have grazed the meadows.

Improper grazing of riparian vegetation by livestock can cause gully erosion. This erosion, in turn, can result in lower water tables, the drying out of meadows, and the loss of valuable wildlife and livestock forage. Grazing management strategies that are sensitive to the development and maintenance of healthy riparian areas are needed.

The uppermost elevations of the survey area typically support high-elevation sagebrush-grass plant communities. The average annual precipitation ranges from 14 to more than 18 inches. Mountain big sagebrush and low sagebrush dominate the shrub canopy of these plant communities. The shrub understory grasses include Idaho fescue, western needlegrass, mountain brome, Columbia needlegrass, Letterman needlegrass, basin wildrye, slender wheatgrass, and bluebunch wheatgrass. Mountain browse species, such as snowberry, serviceberry, and antelope bitterbrush, are common in the shrub overstory. Curlleaf mountainmahogany stands are at the highest elevations, on mountain summits, and the upper side slopes. Areas of aspen woodland are common in concave pockets and along riparian zones.

Plant communities on the high-elevation sites are potentially very productive and normally respond rapidly to management. These sites remain cold and wet through spring and into early summer. They are used as summer range for livestock. Grazing should be delayed until the surface layer has dried sufficiently for compaction to be limited. Snow often blankets these sites by late fall, further restricting the period of livestock grazing. Steeply sloping areas are common throughout the high-elevation sagebrush-grass zone. Livestock tend to overuse the less sloping areas unless grazing is managed for an even distribution of grazing. Fencing, properly locating watering facilities, and herding force livestock to use areas that otherwise might remain ungrazed. Salt and mineral blocks should be placed away from water.

Mule deer use the high-elevation plant communities for summer range. North-facing slopes that have a patchwork of dense stands consisting of mountain

browse are important deer-fawning areas. These dense stands should be maintained because they provide cover for wildlife. Areas of aspen woodland provide important cover for wildlife and are a source of shade for livestock and wildlife.

Seeps and springs are common at the high elevations. Water for livestock generally is readily available. Additional water developments may be needed, however, to distribute the livestock evenly. Developed springs, pipelines, and storage tanks are dependable means of supplying water. Seeps and springs developed to provide livestock water can also be beneficial to wildlife. Excluding livestock by fencing the meadow around a seep or spring and piping the water to troughs or other storage facilities outside the enclosure help to protect the meadow vegetation grazed by wildlife. Enough water must be retained in the fenced seep or spring area to maintain the meadow vegetation. Small meadows can be developed and maintained by piping overflow water from livestock troughs into fenced areas.

Many naturally occurring meadows in the sagebrush-grass zones at the mid and higher elevations have been heavily invaded by big sagebrush. The sagebrush depletes moisture from the meadows. If the sagebrush is removed, the quantity of water and the duration of waterflow increase as grasses return to the meadows. Prescribed burning of dense sagebrush stands can be an economical means of brush management in the high-elevation sagebrush-grass zone. Brush management practices should be designed so that enough of the shrub canopy remains near meadows to provide cover for wildlife.

Rangeland seeding of the high-elevation plant communities is usually not necessary. In most areas, the remnant population of desirable forbs and grasses is sufficient to respond to grazing management and a release from shrub competition. Where rangeland seeding is needed, a wide variety of suitable species can be planted because of the relatively high annual precipitation in this zone.

# Forest Land

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Table 7, "Woodland Management and Productivity" can be used by forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed.

## Woodland Ordination System

Table 7, "Woodland Management and Productivity" lists the ordination (woodland suitability) symbol for each soil. The ordination system is a nationwide uniform system of labeling soils or groups of soils that are similar in use and management. The primary factors evaluated in the woodland ordination system are productivity of the forest overstory tree species and the principal soil properties resulting in hazards and limitations that affect forest management. There are three parts of the ordination system: class, subclass, and group. The class and subclass are referred to as the ordination symbol.

### Ordination Class Symbol

The first element of the ordination symbol is a number that denotes potential productivity in terms of cubic meters of wood per hectare per year for the indicator tree species. The larger the number, the greater the potential productivity. Potential productivity is based on site index and the corresponding culmination of mean annual increment. For example, the number 1 indicates a potential production of 1 cubic meter of wood per hectare per year (14.3 cubic feet per acre per year) and 10 indicates a potential production of 10 cubic meters of wood per hectare per year (143 cubic feet per acre per year).

*Indicator species* is a species that is common in the area and is generally, but not necessarily, the most productive on the soil. It is the species that determines the ordination class. It is the first species listed for a particular map unit in table 7, "Woodland Management and Productivity." This table shows

the productivity for all species where data have been collected.

*Site index* is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. The site indexes shown in table 7, "Woodland Management and Productivity" are averages based on measurements made at sites that are representative of the soil series. When the site index and forest land productivity of different soils are compared, the values for the same tree species should be compared. The higher the site index number, the more productive the soil for that species. Site index values are used in conjunction with yield tables to determine average annual yields. Indirectly, they are used to determine the productivity class in the ordination class symbol.

### Ordination Subclass Symbol

The second element of the ordination symbol, or subclass, is a capital letter that indicates certain soil or physiographic characteristics that contribute to important hazards or limitations to be considered in management. The subclasses are defined as follows:

*Subclass X* indicates that forest land use and management are limited by stones or rocks.

*Subclass W* indicates that forest land use and management are significantly limited by excess water, either seasonally or throughout the year. Restricted drainage, a high water table, or flooding can adversely affect either stand development or management.

*Subclass T* indicates that the root zone has toxic substances. Excessive alkalinity, acidity, sodium salts, or other toxic substances impede the development of desirable species.

*Subclass D* indicates that forest land use and

management are limited by a restricted rooting depth. The rooting depth is restricted by hard bedrock, a hardpan, or other restrictive layers in the soil.

*Subclass C* indicates that forest land use and management are limited by the kind or amount of clay in the upper part of the soil.

*Subclass S* indicates that the soil is sandy, has a low available water capacity, and normally has a low content of available plant nutrients. The use of equipment is limited during dry periods.

*Subclass F* indicates that forest land use and management are limited by a high content of rock fragments that are larger than 2 millimeters and smaller than 10 inches. This subclass includes flaggy soils.

*Subclass R* indicates that forest land use and management are limited by excessive slope.

*Subclass A* indicates that no significant limitations affect forest land use and management.

## Forest Land Management and Productivity

Information about the productivity and management of the forested map units in the survey area is given in table 7, "Woodland Management and Productivity."

### Management Concerns

In table 7, "Woodland Management and Productivity," the soils are rated for the erosion hazard, the equipment limitation, seedling mortality, the windthrow hazard, and plant competition.

The *erosion hazard* is *slight* if the expected soil loss is small; *moderate* if some measures are needed to control erosion during logging and road construction; and *severe* if intensive management or special equipment and methods are needed to prevent excessive soil loss.

The *equipment limitation* is *slight* if the use of equipment is not limited to a particular kind of equipment or time of year; *moderate* if there is a short seasonal limitation or a need for some modification in the management of equipment; and *severe* if there is a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

*Seedling mortality* ratings are for seedlings that are from a good planting stock and that are properly planted during a period of average rainfall. A rating of *slight* indicates that the expected mortality of the planted seedlings is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

*Windthrow hazard* is *slight* if trees in wooded areas are not expected to be blown down by commonly occurring winds; *moderate* if some trees are blown down during periods of excessive soil wetness and strong winds; and *severe* if many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

*Plant competition* is *slight* if there is little or no competition from other plants; *moderate* if plant competition is expected to hinder the development of a fully stocked stand of desirable trees; and *severe* if plant competition is expected to prevent the establishment of a desirable stand unless the site is intensively prepared, weeded, or otherwise managed for the control of undesirable plants.

### Potential Productivity

The potential productivity of merchantable or *common trees* is expressed as a site index, which is described under the heading "Ordination Class Symbol." Commonly grown trees are those that forest land managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.



# Engineering

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This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

*Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.*

*The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.*

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water

capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the "Glossary."

## Building Site Development

Table 8, "Building Site Development," shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features generally are favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to

overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

*Shallow excavations* are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

*Dwellings and small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

*Local roads and streets* have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills generally are limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, potential for frost action, and depth to a high water table affect the traffic-supporting capacity.

*Lawns and landscaping* require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance

of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

## Sanitary Facilities

Table 9, "Sanitary Facilities," shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. It also shows the suitability of the soils for use as a daily cover for landfill.

Soil properties are important in selecting sites for sanitary facilities and in identifying limiting soil properties and site features to be considered in planning, design, and installation. Soil limitation ratings of *slight*, *moderate*, or *severe* are given for septic tank absorption fields, sewage lagoons, and trench and area sanitary landfills. Soil suitability ratings of *good*, *fair*, and *poor* are given for daily cover for landfill.

A rating of *slight* or *good* indicates that the soils have no limitations or that the limitations can be easily overcome. Good performance and low maintenance can be expected. A rating of *moderate* or *fair* indicates that the limitations should be recognized but generally can be overcome by good management or special design. A rating of *severe* or *poor* indicates that overcoming the limitations is difficult or impractical. Increased maintenance may be required.

*Septic tank absorption fields* are areas in which subsurface systems of tile or perforated pipe distribute effluent from a septic tank into the natural soil. The centerline of the tile is assumed to be at a depth of 24 inches. Only the part of the soil between depths of 24 and 60 inches is considered in making the ratings. The soil properties and site features considered are those that affect the absorption of the effluent, those that affect the construction and maintenance of the system, and those that may affect public health.

The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption

of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be a certain thickness.

*Sewage lagoons* are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted, relatively impervious soil material. Aerobic lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Relatively impervious soil material for the lagoon floor and sides is desirable to minimize seepage and contamination of local ground water.

Table 9, "Sanitary Facilities," gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

*Trench sanitary landfill* is an area where solid waste is disposed of by placing refuse in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil that is excavated from the trench. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. Soil properties

that influence the risk of pollution, the ease of excavation, trafficability, and revegetation are the major considerations in rating the soils.

*Area sanitary landfill* is an area where solid waste is disposed of by placing refuse in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil that is imported from a source away from the site. A final cover of soil at least 2 feet thick is placed over the completed landfill. Soil properties that influence trafficability, revegetation, and the risk of pollution are the main considerations in rating the soils for area sanitary landfills.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. The ratings in table 9, "Sanitary Facilities" are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

*Daily cover for landfill* is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The suitability of a soil for use as cover is based on properties that affect workability and the ease of digging, moving, and spreading the material over the refuse daily during both wet and dry periods.

Soil texture, wetness, rock fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

## Waste Management

Soil properties are important when organic waste is applied as fertilizer and wastewater is applied in irrigated areas. They also are important when the soil is used as a medium for the treatment and disposal of the organic waste and wastewater. Unfavorable soil properties can result in environmental damage.

The use of organic waste and wastewater as production resources results in energy and resource conservation and minimizes the problems associated with waste disposal. If disposal is the goal, applying a maximum amount of the organic waste or the wastewater to a minimal area holds costs to a minimum and environmental damage is the main hazard. If reuse is the goal, a minimum amount should be applied to a maximum area and environmental damage is unlikely.

Interpretations developed for waste management may include ratings for manure- and food-processing waste, municipal sewage sludge, use of wastewater for irrigation, and treatment of wastewater by slow rate, overland flow, and rapid infiltration processes.

Specific information regarding waste management is available at the local office of the Natural Resources Conservation Service or Cooperative Extension.

## Construction Materials

Table 10, "Construction Materials," gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good*, *fair*, or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel.

*Roadfill* is soil material that is excavated in one place and used in road embankments in another place. In table 10, "Construction Materials," the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is

stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel, or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have one or more of the following characteristics: a plasticity index of more than 10, a high shrink-swell potential, many stones, slopes of more than 25 percent, or a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

*Sand* and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction.

Specifications for each use vary widely. In table 10 "Construction Materials," only the probability of finding material in suitable quantity in or below the soil is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is as much as 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

*Topsoil* is used to cover an area so that vegetation

can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey; have less than 20 inches of suitable material; have a large amount of gravel, stones, or soluble salts; have slopes of more than 15 percent; or have a seasonal high water table at or near the surface.

The surface layer of most soils generally is preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

## Water Management

Table 11, "Water Management" gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features generally are favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the

limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

*Pond reservoir areas* hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

*Embankments, dikes, and levees* are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In table 11, "Water Management," the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even more than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

*Aquifer-fed excavated ponds* are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

*Drainage* is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers

that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, or sulfur. Availability of drainage outlets is not considered in the ratings.

*Irrigation* is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of

the root zone, the amount of salts or sodium, and soil reaction.

*Terraces and diversions* are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff.

Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of soil blowing or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

*Grassed waterways* are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of soil blowing, low available water capacity, restricted rooting depth, toxic substances such as salts or sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

# Soil Properties

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Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features listed in tables are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

## Engineering Index Properties

Table 12, "Engineering Index Properties" gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

*Depth* to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given in the series descriptions in Part I of this survey.

*Texture* is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the "Glossary."

*Classification* of the soils is determined according to the system adopted by the American Association of State Highway and Transportation Officials (1) and the Unified soil classification system (2).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index

number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

*Rock fragments* larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

*Percentage (of soil particles) passing designated sieves* is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively.

Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

*Liquid limit and plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

## Physical and Chemical Properties

Table 13, "Physical Properties of the Soils," and table 14, "Chemical Properties of the Soils," show estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given in the series descriptions in Part I of this survey.

*Clay* as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They

determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

*Moist bulk density* is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In table 13, "Physical Properties of the Soils," the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Permeability* refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Shrink-swell potential* is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed



clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, more than 9 percent, is sometimes used.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition. In table 13, "Physical Properties of Soils," the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

*Erosion factor K* indicates the susceptibility of a soil to sheet and rill erosion. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, very fine sand, sand, and organic matter (as much as 4 percent) and on soil structure and permeability. The estimates are modified by the presence of rock fragments. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion.

*Erosion factor K<sub>f</sub>* indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

*Erosion factor T* is an estimate of the maximum average rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

*Wind erodibility groups* are made up of soils that have similar properties affecting their resistance to soil blowing in cultivated areas. The groups indicate the susceptibility of soil to soil blowing. Soils are grouped according to the following distinctions:

1. Coarse sands, sands, fine sands, and very fine sands. These soils generally are not suitable for

crops. They are extremely erodible and vegetation is difficult to establish.

2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material. These soils are very highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams that have more than 5 percent finely divided calcium carbonate. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control soil blowing are used.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material. These soils have less than 5 percent finely divided calcium carbonate. These soils are moderately erodible. Crops can be grown if measures to control soil blowing are used.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay. These soils have less than 5 percent finely divided calcium carbonate. These soils are moderately erodible. Crops can be grown if ordinary measures to control soil blowing are used.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material. These soils have less than 5 percent finely divided calcium carbonate. These soils are very slightly erodible. Crops can be grown if ordinary measures to control soil blowing are used.

8. Soils that are not subject to soil blowing because of rock fragments on the surface or because of surface wetness.

*Wind erodibility index* is a numerical value indicating the susceptibility of soil to soil blowing, or the tons per acre per year that can be expected to be lost to soil blowing. There is a close correlation between soil blowing and the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence soil blowing.

*Cation-exchange capacity* is the total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. Soils having a high cation-exchange capacity can retain cations. The ability to retain cations helps to prevent the pollution of ground water.

*Soil reaction* is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

*Calcium carbonate equivalent* is the percent of carbonates, by weight, in the soil. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

*Gypsum* is given as the percent, by weight, of hydrated calcium sulfates in the soil. Gypsum is partially soluble in water and can be dissolved and removed by water. Soils that have a high content of gypsum (more than 10 percent) may collapse if the gypsum is removed by percolating water.

*Salinity* is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of the soil if used as construction material, and the potential of the soil to corrode metal and concrete.

*Sodium adsorption ratio* is the measure of sodium relative to calcium and magnesium in the water extract from saturated soil paste. Soils having a sodium adsorption ratio of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

## Water Features

Table 15, "Water Features" gives estimates of several important water features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

*Hydrologic soil groups* are groups of soils that, when saturated, have the same runoff potential under similar storm and ground cover conditions. The soil properties that affect the runoff potential are those that influence the minimum rate of infiltration in a bare soil after prolonged wetting and when the soil is not frozen. These properties include the depth to a seasonal high water table, the intake rate, permeability after prolonged wetting, and the depth to a very slowly permeable layer. The influences of ground cover and slope are treated independently and are not taken into account in hydrologic soil groups.

In the definitions of the hydrologic soil groups, the infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions. The transmission rate is the rate at which water moves through the soil and is controlled by properties of the soil layers.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist chiefly of very deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well or well drained soils that have a moderately fine to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils that have a moderately fine or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clayey soils that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils

have a very slow rate of water transmission.

*Flooding*, the temporary covering of the soil surface by flowing water, is caused by overflow from streams or by runoff from adjacent slopes. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in marshes and swamps or in closed depressions is considered to be ponding.

Table 15, "Water Features," gives the frequency and duration of flooding and the time of year when flooding is most likely to occur. Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as none, rare, occasional, or frequent. *None* means flooding is not probable; *rare* that it is unlikely but is possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); and *frequent* that it occurs often under normal weather conditions (the chance of flooding is 50 percent in any year). The term *common* includes both frequent and occasional flooding.

Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 to 30 days), and *very long* (more than 30 days). The time of year that flooding is most likely to occur is expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and level of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

*High water table* (seasonal) is a zone of saturation at the highest average depth during the wettest season. It is at least 6 inches thick, persists in the soil for more than a few weeks, and is within 6 feet of the surface. Indicated in table 15, "Water Features," are the depth to the seasonal high water table, the kind of water table, and the months of the year when the water table usually is highest.

An *apparent* water table is indicated by the level at which water stands in a freshly dug, unlined borehole after adequate time for adjustments in the surrounding soil.

A *perched* water table is one that is above an unsaturated zone in the soil. The basis for determining that a water table is perched may be general knowledge of the area. The water table is proven to be perched if the water level in a borehole is observed to fall when the borehole is extended.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. "More than 6.0" indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

*Ponding* is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation.

## Soil Features

Table 16, "Soil Features," gives estimates of several important soil features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

*Depth to bedrock* is given if bedrock is within a depth of 60 inches. The depth is based on many soil borings and on observations during soil mapping. The rock is specified as either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

A *cemented pan* is a nearly continuous layer of indurated or strongly cemented material that is hard and brittle. The particles are held together by cementing substances, such as calcium carbonate and oxides of silicon, iron, or aluminum. Pans are identified when they are within a depth of 60 inches. They are classified as thin or thick. A *thin* pan can be excavated by trenching machines, backhoes, small rippers, and other equipment commonly used to dig excavations for pipelines, sewer lines, and graves. A *thick* pan is so thick or massive that blasting or special equipment is needed when excavations are made.

*Subsidence* is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place

gradually, usually over a period of several years. Table 16, "Soil Features," shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

*Potential frost action* is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage mainly to pavements and other rigid structures.

A *low* potential for frost action indicates that the soil is rarely susceptible to the formation of ice lenses; a *moderate* potential indicates that the soil is susceptible to formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength;

and a *high* potential indicates that the soil is highly susceptible to formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength.

*Risk of corrosion* pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil.

Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

## References

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# Glossary

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- Aeration, soil.** The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.
- Aggregate, soil.** Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.
- Alkali (sodic) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.
- Alluvial cone.** The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.
- Alluvial fan.** The fanlike deposit of a stream where it issues from a narrow valley upon a plain, or of a tributary stream near or at its junction with its main stream.
- Alluvial flat.** A nearly level, graded, alluvial surface in bolsons and semi-bolsons. Commonly, an alluvial flat does not manifest terraces or floodplain levels.
- Alluvium.** Material, such as sand, silt, or clay, deposited on land by streams.
- Alpha,alpha-dipyridyl.** A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.
- Animal unit month (AUM).** The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.
- Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.
- Area reclaim** (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.
- Argillic horizon.** A subsoil horizon characterized by an accumulation of illuvial clay.
- Argillite.** Weakly metamorphosed mudstone or shale.
- Arroyo.** The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.
- Aspect.** The direction in which a slope faces.
- Association, soil.** A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.
- Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:
- |                |               |
|----------------|---------------|
| Very low.....  | 0 to 3.5      |
| Low .....      | 3.5 to 5      |
| Moderate ..... | 5 to 7.5      |
| High .....     | more than 7.5 |
- Avalanche chute.** The track or path formed by an avalanche.
- Backslope.** The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Backslopes in profile are commonly steep, are linear, and may or may not include cliff segments.
- Backswamp.** A floodplain landform of extensive, marshy, or swampy, depressed areas of flood

plains between natural levees and valley sides or terraces.

**Badland.** Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

**Ballena.** A fan remnant having a distinctively-rounded surface of fan alluvium. The ballena's broadly rounded shoulders meet from either side to form a narrow summit and merge smoothly with concave, short pediments which form smoothly-rounded drainageways between adjacent ballenas. A partial ballena is a fan remnant large enough to retain some relict fan surface on a remnant summit.

**Barrier beach.** A wide gently sloping portion of a bolson floor comprising numerous, parallel, relict longshore-bars and lagoons built by a receding pluvial lake.

**Basal area.** The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

**Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

**Basin floor.** A general term for the nearly level, lower-most part of intermontane basins (i.e., bolson, semi-bolsos). The basin floor includes all of the alluvial, eolian, and erosional landforms below the piedmont slope.

**Beach terrace.** The relict shorelines from pluvial lakes, generally restricted to valley sides.

**Bedding planes.** Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

**Bedding system.** A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

**Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

**Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are

determined or strongly influenced by the underlying bedrock.

**Bench terrace.** A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

**Bisequum.** Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

**Blowout.** A shallow depression from which all or most of the soil material has been removed by wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts, the water table is exposed.

**Board foot.** A unit of measure of the wood in lumber, logs, or trees. The amount of wood in a board one foot wide, one foot long, and one inch thick before finishing.

**Bolson.** A landscape term for an internally drained intermontane basin into which drainages from surrounding mountains converge inward toward a central depression.

**Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.

**Breaks.** The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

**Breast height.** An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

**Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

**Butte.** An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.

**Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

**Caldera.** A large, more or less circular depression, formed by explosion and/or collapse, which surrounds a volcanic vent or vents, and whose



diameter is much greater than that of the included vent, or vents.

**Caliche.** A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.

**California bearing ratio (CBR).** The load-supporting capacity of a soil as compared to that of a standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

**Canopy.** The leafy crown of trees or shrubs. (See Crown.)

**Canyon.** A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

**Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

**Catena.** A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

**Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

**Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

**Channeled.** Refers to a drainage area in which natural meandering or repeated branching and convergence of a streambed have created deeply incised cuts, either active or abandoned, in alluvial material.

**Channery soil material.** Soil material that is, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

**Chemical treatment.** Control of unwanted vegetation through the use of chemicals.

**Chiseling.** Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

**Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

**Clay depletions.** Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

**Clayey soil.** Silty clay, sandy clay, or clay.

**Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

**Claypan.** A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

**Clearcut.** A method of forest harvesting that removes the entire stand of trees in one cutting. Reproduction is achieved artificially or by natural seeding from adjacent stands.

**Climax plant community.** The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

**Closed depression.** A low area completely surrounded by higher ground and having no natural outlet.

**Coarse fragments.** Mineral or rock particles larger than 2 millimeters in diameter.

**Coarse textured soil.** Sand or loamy sand.

**Cobble (or cobblestone).** A rounded, partly rounded, or angular fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

**Cobbly soil material.** Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.

**Codominant trees.** Trees whose crowns form the general level of the forest canopy and that receive full light from above but comparatively little from the sides.

**Colluvium.** Unconsolidated, unsorted earth material moved and deposited by mass movement on sideslopes and at the base of slopes.

**Commercial forest.** Forest land capable of producing 20 cubic feet or more per acre per year at the culmination of mean annual increment.

**Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

**Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

**Compressible** (in tables). Excessive decrease in volume of soft soil under load.

**Concretions.** Cemented bodies with crude internal symmetry organized around a point, a line, or a plane that typically takes the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

**Conglomerate.** A coarse grained, clastic rock composed of rounded to subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

**Conservation cropping system.** Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

**Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

**Consistence, soil.** Refers to the degree of cohesion and adhesion of soil material and its resistance

to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

**Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

**Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but, for many, it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

**Coprogenous earth (sedimentary peat).** Fecal material deposited in water by aquatic organisms.

**Corrosion.** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

**Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

**Cropping system.** Growing crops according to a planned system of rotation and management practices.

**Crop residue management.** Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

**Cross-slope farming.** Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

**Crown.** The upper part of a tree or shrub, including the living branches and their foliage.

**Cuesta.** A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

**Culmination of the mean annual increment (CMAI).**

The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

**Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.

**Decreasers.** The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

**Deep soil.** A soil that is 40 to 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Deferred grazing.** Postponing grazing or resting grazing land for a prescribed period.

**Delta.** A body of alluvium having a surface that is nearly flat and fan shaped, deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

**Dense layer** (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

**Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

**Depth to rock** (in tables). Bedrock is too near the surface for the specified use.

**Desert pavement.** On a desert surface, a layer of gravel or larger fragments that was emplaced by upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

**Dip slope.** A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

**Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

**Divided-slope farming.** A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

**Dominant trees.** Trees whose crowns form the general level of the forest canopy and that receive full light from above and from the sides.

**Drainage class (natural).** Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed.

Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized: excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

**Drainage, surface.** Runoff, or surface flow of water, from an area.

**Drainageway.** An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

**Duff.** A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

**Dune.** A mound, ridge, or hill of loose, windblown granular material (generally sand), either bare or covered with vegetation.

**Ecological Site.** A distinctive kind of rangeland or grazed forestland that has a unique historic potential native plant community. Ecological sites are the products of all the environmental factors that affect their development. An ecological site is capable of supporting a native plant community that has a unique kind and/or proportion of species or total vegetative production. Ecological sites in grazed forestland include both overstory and understory vegetation.

**Effervescence.** The quality of a soil measured when drops of diluted (1:10) hydrochloric acid (HCL) are added to the soil. The ratings are as follows:

Very slightly effervescent .....few bubbles  
Slightly effervescent .....bubbles readily  
Strongly effervescent .....bubbles form low foam  
Violently effervescent .....bubbles form thick foam quickly

**Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

**Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

**Eolian soil material.** Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

**Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

**Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

**Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.  
*Erosion (geologic).* Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

*Erosion (accelerated).* Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

**Erosion pavement.** A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

**Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

**Even aged.** Refers to a stand of trees in which only small differences in age occur between the individuals. A range of 20 years is allowed.

**Excess alkali (in tables).** Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

**Excess fines (in tables).** Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

**Excess lime (in tables).** Excess carbonates in the soil that restrict the growth of some plants.

**Excess salts (in tables).** Excess water-soluble salts in the soil that restrict the growth of most plants.

**Excess sodium (in tables).** Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

**Excess sulfur (in tables).** Excessive amount of sulfur in the soil. The sulfur causes extreme acidity if the soil is drained, and the growth of most plants is restricted.

**Extrusive rock.** Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

**Fallow.** Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

**Fan apron.** A sheet-like mantle of relatively young alluvium covering part of an older fan piedmont surface. It somewhere buries a soil that can be traced to the edge of the fan apron.

**Fan piedmont.** The most extensive landform on piedmont slopes, formed by the coalescence of alluvial fans or accretions of fan aprons into one generally smooth slope.

**Fan remnant.** A general term for landforms that are remaining parts of older fan-landforms, that either have been dissected or partially buried.

**Fan skirt.** The zone of smooth, laterally-coalescing, small alluvial fans that issue from gullies cut into the fan piedmont or that are the coalescing extensions of inset fans of the fan piedmont, and that merge with the basin floor.

**Fast intake (in tables).** The rapid movement of water into the soil.

**Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

**Fibric soil material (peat).** The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

**Field moisture capacity.** The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called

*normal field capacity, normal moisture capacity, or capillary capacity.*

**Fill slope.** A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

**Fine textured soil.** Sandy clay, silty clay, or clay.

**Firebreak.** An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of fire fighters and equipment. Designated roads also serve as firebreaks.

**First bottom.** The normal flood plain of a stream, subject to frequent or occasional flooding.

**Flaggy soil material.** Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material is 35 to 60 percent flagstones, and extremely flaggy soil material is more than 60 percent flagstones.

**Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

**Flood plain.** A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

**Fluvial.** Of or pertaining to rivers; produced by river action, as a fluvial plain.

**Foothill.** A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

**Foot slope.** The inclined surface at the base of a hill.

**Forb.** Any herbaceous plant not a grass or a sedge.

**Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.

**Fragile** (in tables). A soil that is easily damaged by use or disturbance.

**Frost action** (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

**Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

**Gilgai.** The microrelief of clayey soils that shrink and swell considerably with changes in moisture content. Usually manifested as a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope.

**Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

**Graded stripcropping.** Growing crops in strips that grade toward a protected waterway.

**Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

**Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

**Gravelly soil material.** Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

**Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

**Ground water.** Water filling all the unblocked pores of underlying material below the water table.

**Gully.** A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

**Gypsum.** A mineral consisting of hydrous calcium sulfate.

**Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

**Hardpan.** A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

**Heavy metal.** Inorganic substances that are solid at ordinary temperatures and are not soluble in water. They form oxides and hydroxides that are basic. Examples are copper, iron, cadmium, zinc, manganese, lead, and arsenic.

**Hemic soil material (mucky peat).** Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

**High-residue crops.** Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

**Hill.** A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

**Holocene.** The epoch of the Quaternary Period of geologic time, extending from the end of the Pleistocene Epoch (about 10 to 12 thousand years ago) to the present.

**Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. The major horizons of mineral soil are as follows:

*O horizon.*--An organic layer of fresh and decaying plant residue.

*A horizon.*--The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

*E horizon.*--The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

*B horizon.*--The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

*C horizon.*--The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cr horizon.*--Soft, consolidated bedrock beneath the soil.

*R layer.*--Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

**Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.

**Hydrologic soil groups.** Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

**Igneous rock.** Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

**Illuviation.** The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

**Impervious soil.** A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

**Increasers.** Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and less palatable to livestock.

**Infiltration.** The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

**Infiltration capacity.** The maximum rate at which water can infiltrate into a soil under a given set of conditions.

**Infiltration rate.** The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

**Inset fan.** A special case of the flood plain of an ephemeral stream that is confined between fan remnants, basin-floor remnants, ballenas, or closely opposed fan toeslopes.

**Intake rate.** The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2 .....	very low
0.2 to 0.4 .....	low
0.4 to 0.75 .....	moderately low
0.75 to 1.25 .....	moderate
1.25 to 1.75 .....	moderately high
1.75 to 2.5 .....	high
More than 2.5 .....	very high

**Intermittent stream.** A stream, or reach of a stream, that flows for prolonged periods only when it receives groundwater discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

**Intermontane basin.** A generic term for wide structural depressions between mountain ranges that are partly filled with alluvium. They may be drained internally (bolsons) or externally (semi-bolsons).

**Invaders.** On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

**Iron depletions.** Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

**Irrigation.** Application of water to soils to assist in production of crops. Methods of irrigation are:

*Basin.*--Water is applied rapidly to nearly level plains surrounded by levees or dikes.

*Border.*--Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes or borders.

*Controlled flooding.*--Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

*Corrugation.*--Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

*Drip (or trickle).*--Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

*Furrow.*--Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

*Sprinkler.*--Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

*Subirrigation.*--Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

*Wild flooding.*--Water, released at high points, is allowed to flow onto an area without controlled distribution.

**Lacustrine deposit.** Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

**Lagoon.** The nearly level, filled depression behind the longshore bar on a barrier beach.

**Lake plain.** A surface marking the floor of an extinct lake, filled in by well sorted, stratified sediments.

**Lake terrace.** A remnant lake plain surface formed by recessional stands of pluvial lakes, characterized by a broad nearly level surface and a low scarp.

**Lamella.** A thin, generally horizontal layer of fine material illuviated within a very much thicker, coarser, eluviated layer.

**Landform.** Any recognizable form or feature on the earth's surface, having a characteristic shape, and produced by natural causes that provide an empirical description of similar portions of the earth's surface.

**Landscape.** A collection of related, natural landforms.

**Landslide.** The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

**Large stones** (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

**Leaching.** The removal of soluble material from soil or other material by percolating water.

**Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.

**Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

**Loamy soil.** Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.

**Loess.** Fine grained material, dominantly of silt-sized particles, deposited by wind.

**Longshore bar.** A narrow, elongate, coarse-textured ridge, built by the wave action of a pluvial lake, that extends parallel to the shore and separated it from a lagoon; both the bar and lagoon are now relict features.

**Low-residue crops.** Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

**Low strength.** The soil is not strong enough to support loads.

**Marl.** An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

**Masses.** Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

**Mean annual increment (MAI).** The average annual increase in volume of a tree during the entire life of the tree.

**Mechanical treatment.** Use of mechanical equipment for seeding, brush management, and other management practices.

**Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.

**Merchantable trees.** Trees that are of sufficient size to be economically processed into wood products.

**Metamorphic rock.** Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

**Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

**Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.

**Miscellaneous area.** An area that has little or no natural soil and supports little or no vegetation.

**Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.

**Moderately deep soil.** A soil that is 20 to 40 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.

**Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

**Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

**Mottling, soil.** Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance--*few*, *common*, and *many*; size--*fine*, *medium*, and *coarse*; and contrast--*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

**Mountain.** A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

**Muck.** Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

**Mudstone.** Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

**Munsell notation.** A designation of color by degrees of three simple variables--hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

**Natric horizon.** A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

**Neutral soil.** A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

**Nodules.** Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

**Nutrient, plant.** Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.



**Observed rooting depth.** Depth to which roots have been observed to penetrate.

**Organic matter.** Plant and animal residue in the soil in various stages of decomposition.

**Overstory.** The trees in a forest that form the upper crown cover.

**Oxbow.** The horseshoe-shaped channel of a former meander, remaining after the stream formed a cutoff across a narrow meander neck.

**Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

**Parent material.** The unconsolidated organic and mineral material in which soil forms.

**Parna dune.** An eolian dune built of sand size aggregates of clayey material that commonly occurs leeward of a playa.

**Peat.** Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

**Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pediment.** A gently sloping erosional surface developed at the foot of a receding hill or mountain slope.

**Pedisediment.** A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

**Pedon.** The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

**Percolation.** The downward movement of water through the soil.

**Percs slowly** (in tables). The slow movement of water through the soil adversely affects the specified use.

**Permeability.** The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability."

Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow .....	0.00 to 0.01 inch
Very slow .....	0.01 to 0.06 inch
Slow .....	0.06 to 0.2 inch
Moderately slow .....	0.2 to 0.6 inch
Moderate .....	0.6 inch to 2.0 inches
Moderately rapid .....	2.0 to 6.0 inches
Rapid .....	6.0 to 20 inches
Very rapid .....	more than 20 inches

**Phase, soil.** A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

**pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

**Piedmont slope.** The dominant slope at the foot of a mountain. Main components of the piedmont slope include pediments, alluvial fans, fan piedmonts, fan skirts and inset fans.

**Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

**Pitting** (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

**Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

**Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.

**Plateau.** An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

**Playa.** The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

**Pleistocene.** The epoch of the Quaternary Period of geologic time preceding the Holocene (from approximately 2 million to 10 thousand years ago).

**Plowpan.** A compacted layer formed in the soil directly below the plowed layer.

**Pluvial.** Relating to former periods of abundant rains.

**Ponding.** Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

**Poor filter** (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

**Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

**Poor outlets** (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

**Potential native plant community.** See Climax plant community.

**Potential rooting depth (effective rooting depth).**

Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

**Prescribed burning.** Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

**Productivity, soil.** The capability of a soil for producing a specified plant or sequence of plants under specific management.

**Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.

**Proper grazing use.** Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

**Quartzite, metamorphic.** Rock consisting mainly of quartz that formed through recrystallization of quartz-rich sandstone or chert.

**Quaternary.** The period of geologic time, extending from about 2 million years ago to the present and comprising two epochs, the Pleistocene (Ice Age) and Holocene (Recent).

**Quartzite, sedimentary.** Very hard but unmetamorphosed sandstone consisting chiefly of quartz grains.

**Range condition.** The present composition of the plant community on a range site in relation to the potential natural plant community for that site. Range condition is expressed as excellent, good, fair, or poor on the basis of how much the present plant community has departed from the potential.

**Rangeland.** Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

**Range site.** An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

**Reaction, soil.** A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid .....	less than 3.5
Extremely acid .....	3.5 to 4.4
Very strongly acid .....	4.5 to 5.0
Strongly acid .....	5.1 to 5.5
Moderately acid .....	5.6 to 6.0
Slightly acid .....	6.1 to 6.5
Neutral .....	6.6 to 7.3
Slightly alkaline. (mildly alkaline) .....	7.4 to 7.8
Moderately alkaline .....	7.9 to 8.4
Strongly alkaline .....	8.5 to 9.0
Very strongly alkaline .....	9.1 and higher

**Redoximorphic concentrations.** Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

**Redoximorphic depletions.** Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

**Redoximorphic features.** Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

**Reduced matrix.** A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly

continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

**Regeneration.** The new growth of a natural plant community, developing from seed.

**Regolith.** The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

**Relict stream terrace.** One of a series of platforms in or adjacent to a stream valley that formed prior to the current stream system.

**Relief.** The elevations or inequalities of a land surface, considered collectively.

**Residuum (residual soil material).** Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

**Rill.** A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

**Riverwash.** Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

**Road cut.** A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

**Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

**Rock outcrop.** Exposures of bare bedrock other than lava flows and rock-lined pits.

**Rooting depth** (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

**Root zone.** The part of the soil that can be penetrated by plant roots.

**Rubble land.** Areas that have more than 90 percent of the surface covered by stones or boulders. Voids contain no soil material and virtually no vegetation other than lichens. The areas commonly are at the base of mountain slopes, but some are on mountain slopes as deposits of cobbles, stones, and boulders left by Pleistocene glaciation or by periglacial phenomena.

**Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is

called groundwater runoff or seepage flow from ground water.

**Saline soil.** A soil containing soluble salts in an amount that impairs the growth of plants. A saline soil does not contain excess exchangeable sodium.

**Salinity.** The electrical conductivity of a saline soil. It is expressed, in millimhos per centimeter, as follows:

Nonsaline .....	0 to 2
Very slightly saline .....	2 to 4
Slightly saline .....	4 to 8
Moderately saline .....	8 to 16
Strongly saline .....	More than 16

**Salty water** (in tables). Water that is too salty for consumption by livestock.

**Sand.** As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

**Sand sheet.** A large, irregularly shaped, surficial mantle of eolian sand.

**Sandstone.** Sedimentary rock containing dominantly sand-sized particles.

**Sandy soil.** Sand or loamy sand.

**Sapric soil material (muck).** The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

**Saprolite.** Unconsolidated residual material underlying the soil and grading to hard bedrock below.

**Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

**Sawlogs.** Logs of suitable size and quality for the production of lumber.

**Scarification.** The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

**Scribner's log rule.** A method of estimating the number of board feet that can be cut from a log of a given diameter and length.

**Second bottom.** The first terrace above the normal flood plain (or first bottom) of a river.

**Sedimentary rock.** Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate,

formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

**Seepage** (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

**Semi-bolson**. An intermontane basin that is drained externally by an intermittent stream.

**Sequum**. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

**Series, soil**. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

**Shale**. Sedimentary rock formed by the hardening of a clay deposit.

**Shallow soil**. A soil that is 10 to 20 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Sheet erosion**. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

**Shelterwood system**. A forest management system requiring the removal of a stand in a series of cuts so that regeneration occurs under a partial canopy. After regeneration, a final cut removes the shelterwood and allows the stand to develop in the open as an even-aged stand. The system is well suited to sites where shelter is needed for regeneration, and it can aid regeneration of the more intolerant tree species in a stand.

**Shoulder slope**. The uppermost inclined surface at the top of a hillside. It is the transition zone from the back slope to the summit of a hill or mountain. The surface is dominantly convex in profile and erosional in origin.

**Shrink-swell** (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

**Shrub-coppice dune**. A small dune that forms around shrubs or small trees.

**Silica**. A combination of silicon and oxygen. The mineral form is called quartz.

**Silt**. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural

class, soil that is 80 percent or more silt and less than 12 percent clay.

**Siltstone**. Sedimentary rock made up of dominantly silt-sized particles.

**Similar soils**. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

**Sinkhole**. A depression in the landscape where limestone has been dissolved.

**Site class**. A grouping of site indexes into five to seven production capability levels. Each level can be represented by a site curve.

**Site curve (50-year)**. A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for the range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 50 years old or are 50 years old at breast height.

**Site curve (100-year)**. A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for a range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 100 years old or are 100 years old at breast height.

**Site index**. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

**Skid trails**. Pathways along which logs are dragged to a common site for loading onto a logging truck.

**Slash**. The branches, bark, treetops, reject logs, and broken or uprooted trees left on the ground after logging.

**Slickens**. Accumulations of fine-textured material, such as material separated in placer-mine and ore-mill operations. Slickens from ore mills commonly consist of freshly ground rock that has undergone chemical treatment during the milling process.

**Slickensides**. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of

blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

**Slick spot.** A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

**Slippage** (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

**Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, the following slope classes are recognized:

Nearly level .....	0 to 2 percent
Gently sloping .....	2 to 4 percent
Moderately sloping .....	4 to 8 percent
Strongly sloping .....	8 to 15 percent
Moderately steep .....	15 to 30 percent
Steep .....	30 to 50 percent
Very steep .....	50 to 75 percent
Extremely steep .....	75 percent and higher

**Slope** (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

**Slow intake** (in tables). The slow movement of water into the soil.

**Slow refill** (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

**Small stones** (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

**Sodic (alkali) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

**Sodicity.** The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of  $Na^+$  to  $Ca^{++} + Mg^{++}$ . The degrees of sodicity and their respective ratios are:

Very slight .....	5-12:1
Slight .....	13-30:1
Moderate .....	31-45:1
Strong .....	46-90:1
Very strong .....	more than 90:1

**Soft bedrock.** Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

**Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

**Soil separates.** Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand .....	2.0 to 1.0
Coarse sand .....	1.0 to 0.5
Medium sand .....	0.5 to 0.25
Fine sand .....	0.25 to 0.10
Very fine sand .....	0.10 to 0.05
Silt .....	0.05 to 0.002
Clay .....	less than 0.002

**Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

**Species.** A single, distinct kind of plant or animal having certain distinguishing characteristics.

**Stone line.** A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

**Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

**Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.

**Strath terrace.** A surface cut formed by the erosion of hard or semiconsolidated bedrock and thinly mantled with stream deposits.

**Stream channel.** The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

**Stream terrace.** One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

**Stripcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing and water erosion.

**Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are: *platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

**Stubble mulch.** Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

**Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.

**Subsoiling.** Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

**Substratum.** The part of the soil below the solum.

**Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.

**Summer fallow.** The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

**Summit.** A general term for the top, or highest level, of an upland feature, such as a hill or mountain. It commonly refers to a higher area that has a gentle slope and is flanked by steeper slopes.

**Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer" or the "Ap horizon."

**Surface soil.** The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

**Tailwater.** The water directly downstream of a structure.

**Talus.** Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

**Taxadjuncts.** Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

**Terrace.** An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field is generally built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

**Terrace (geologic).** A step-like surface, ordinarily flat or undulating, bordering a river, a lake, or the sea representing a former flood plain.

**Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

**Thin layer** (in tables). Otherwise suitable soil material too thin for the specified use.

**Till plain.** An extensive area of nearly level to undulating soils underlain by glacial till.

**Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

**Toe slope.** The outermost inclined surface at the base of a hill; part of a foot slope.

**Too arid** (in tables). The soil is dry most of the time, and vegetation is difficult to establish.

**Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to

topdress roadbanks, lawns, and land affected by mining.

**Toxicity** (in tables). Excessive amount of toxic substances, such as sodium or sulfur, that severely hinder establishment of vegetation or severely restrict plant growth.

**Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

**Trafficability.** The degree to which a soil is capable of supporting vehicular traffic across a wide range in soil moisture conditions.

**Tread.** The relatively flat terrace surface that was cut or built by stream or wave action.

**Tuff.** A compacted deposit that is 50 percent or more volcanic ash and dust.

**Understory.** Any plants in a forest community that grow to a height of less than 5 feet.

**Unstable fill** (in tables). Risk of caving or sloughing on banks of fill material.

**Upland** (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

**Valley.** An elongated depressional area primarily developed by stream action.

**Valley fill.** In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

**Variation.** Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

**Very deep soil.** A soil that is more than 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Very shallow soil.** A soil that is less than 10 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Water bars.** Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

**Waterspreading.** Diverting runoff from natural channels by means of a system of dams, dikes, or ditches and spreading it over relatively flat surfaces.

**Water supplying capacity.** The total amount of water available in the soil for plant growth in a normal year from precipitation and from runoff from higher areas. Runoff and water lost to deep percolation are not included.

**Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

**Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

**Wilting point (or permanent wilting point).** The moisture content of soil, on an oven-dry basis, at which a plant (specifically, a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

**Windthrow.** The uprooting and tipping over of trees by the wind.

# TABLES

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TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1961-1990 at Fallon Experiment Station, Nevada)

Month	Temperature (Degrees F.)						Precipitation (Inches)				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average total snow fall
				Maximum temperature higher than--	Minimum temperature lower than--			less than	more than		
January	44.7	18.6	31.6	66	-5	21	0.48	0.19	0.75	1	2.4
February	52.4	23.6	38.0	71	2	59	0.53	0.13	0.85	1	1.4
March	58.3	27.9	43.1	77	11	142	0.41	0.12	0.68	1	1.4
April	65.1	33.3	49.2	85	18	281	0.55	0.14	0.92	1	0.5
May	73.7	41.0	57.3	92	26	537	0.68	0.14	1.14	1	0.3
June	83.1	48.3	65.7	99	33	770	0.57	0.12	1.02	1	0.0
July	91.4	53.5	72.5	101	40	1,006	0.21	0.05	0.43	0	0.0
August	89.3	51.7	70.5	101	39	944	0.30	0.08	0.60	1	0.0
September	80.3	43.3	61.8	95	27	653	0.36	0.14	0.81	1	0.0
October	69.3	33.6	51.5	87	17	362	0.43	0.14	0.78	1	0.1
November	55.1	26.0	40.6	74	9	101	0.42	0.16	0.67	1	0.5
December	45.7	19.1	32.4	65	-4	27	0.37	0.12	0.62	1	1.4
Yearly :											
Average	67.4	35.0	51.2	---	---	---	---	---	---	---	---
Extreme	106	-27	---	102	-11	---	---	---	---	---	---
Total	---	---	---	---	---	4,902	5.31	4.08	6.46	11	8.0

Average number of days per year with at least 1 inch of snow on the ground: 9

\*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

TABLE 1.--TEMPERATURE AND PRECIPITATION  
(Recorded in the period 1961-1990 at Lahontan, Nevada)

Month	Temperature (Degrees F.)						Precipitation (Inches)				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average total snow fall
				Maximum temperature higher than--	Minimum temperature lower than--			less than	more than		
January	44.2	22.5	33.4	64	2	28	0.49	0.13	0.84	1	2.8
February	51.0	27.2	39.1	70	7	73	0.46	0.10	0.81	1	1.1
March	57.3	32.6	44.9	77	17	189	0.38	0.09	0.63	1	1.5
April	64.7	38.5	51.6	85	25	349	0.38	0.13	0.67	1	0.4
May	74.2	46.8	60.5	94	29	622	0.56	0.12	0.97	1	0.2
June	83.9	55.2	69.5	101	36	881	0.50	0.18	0.87	1	0.0
July	93.1	62.6	77.9	103	45	1,164	0.36	0.11	0.80	1	0.0
August	91.4	61.2	76.3	103	44	1,111	0.53	0.11	1.10	1	0.0
September	81.6	52.0	66.8	97	34	788	0.41	0.16	0.93	1	0.0
October	70.3	42.1	56.2	88	24	497	0.32	0.11	0.71	1	0.1
November	55.3	31.5	43.4	74	14	150	0.53	0.14	0.87	2	0.3
December	45.7	23.6	34.7	65	3	34	0.40	0.12	0.69	1	0.9
Yearly :											
Average	67.7	41.3	54.5	---	---	---	---	---	---	---	---
Extreme	108	-17	---	105	-3	---	---	---	---	---	---
Total	---	---	---	---	---	5,884	5.31	3.26	6.56	13	7.2

Average number of days per year with at least 1 inch of snow on the ground: 3

\*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1961-1990 at Fallon Experiment Station, Nevada.)

Probability	Temperature		
	24 degrees F. or lower	28 degrees F. or lower	32 degrees F. or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 1	May 15	May 30
2 years in 10 later than--	April 25	May 10	May 25
5 years in 10 later than--	April 15	May 1	May 14
First freezing temperature in fall:			
1 year in 10 earlier than--	October 2	September 19	September 12
2 years in 10 earlier than--	October 8	September 25	September 18
5 years in 10 earlier than--	October 21	October 7	September 29

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1961-1990 at Lahontan, Nevada.)

Probability	Temperature		
	24 degrees F. or lower	28 degrees F. or lower	32 degrees F. or lower
Last freezing temperature in spring:			
1 year in 10 later than--	April 12	May 5	May 25
2 years in 10 later than--	April 4	April 28	May 17
5 years in 10 later than--	March 18	April 14	May 1
First freezing temperature in fall:			
1 year in 10 earlier than--	November 1	October 15	September 26
2 years in 10 earlier than--	November 5	October 21	October 4
5 years in 10 earlier than--	November 12	November 1	October 18



TABLE 3.--GROWING SEASON

(Recorded in the period 1961-1990 at the Fallon Experiment Station, Nevada)

Probability	Daily Minimum Temperature during growing season		
	Higher than 24 degrees F.	Higher than 28 degrees F.	Higher than 32 degrees F.
9 years in 10	165	132	111
8 years in 10	173	141	120
5 years in 10	188	158	137
2 years in 10	203	175	153
1 year in 10	211	183	162

TABLE 3.--GROWING SEASON

(Recorded in the period 1961-1990 at Lahontan, Nevada)

Probability	Daily Minimum Temperature during growing season		
	Higher than 24 degrees F.	Higher than 28 degrees F.	Higher than 32 degrees F.
9 years in 10	212	176	139
8 years in 10	220	184	150
5 years in 10	236	200	170
2 years in 10	252	216	190
1 year in 10	260	224	200



TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
100	Budihol-Chill-Rock outcrop association-----	13,518	0.5
102	Budihol-Minneha-Rock outcrop association-----	2,659	0.1
110	Bimmer-Chill association-----	4,018	0.2
120	Nemico-Mirkwood-Rock outcrop association-----	10,932	0.4
130	Bedzee-Loomer-Bedwyr association-----	2,823	0.1
140	Hawsley sand, 2 to 8 percent slopes-----	53,545	2.2
141	Hawsley-Isolde association-----	16,352	0.7
142	Hawsley-Appian-Ruhe association-----	5,578	0.2
143	Hawsley-Gamgee association-----	7,916	0.3
144	Hawsley-Theon-Pirouette association-----	10,925	0.4
146	Hawsley-Juva association-----	6,908	0.3
147	Hawsley-Celeton-Bluewing association-----	3,675	0.1
150	Buckaroo-Bluewing association-----	13,155	0.5
152	Buckaroo-Watoopah-Rezave association-----	3,949	0.2
153	Buckaroo-Rednik-Bluewing association-----	15,002	0.6
154	Buckaroo-Rednik-Genegraf association-----	28,771	1.2
155	Buckaroo-Genegraf-Pineval association-----	5,855	0.2
158	Buckaroo-Celeton-Wholan association-----	2,511	0.1
159	Buckaroo-Genegraf association-----	7,722	0.3
160	Singatse-Rock outcrop association-----	42,346	1.7
161	Singatse-Uripnes-Rock outcrop association-----	1,153	*
162	Singatse-Theon-Rezave association-----	27,512	1.1
164	Singatse-Loomer association-----	2,461	*
170	Isolde-Dune land-Pirouette association-----	7,990	0.3
171	Isolde-Parran-Appian association-----	32,926	1.3
172	Isolde-Pirouette-Hawsley association-----	21,054	0.9
173	Isolde fine sand, slightly saline, 2 to 15 percent slopes-----	132	*
174	Isolde-Ragtown association-----	991	*
180	Bluewing-Inmo association-----	24,568	1.0
181	Bluewing very gravelly loamy sand, 2 to 8 percent slopes-----	1,908	*
184	Bluewing-Pineval association-----	13,579	0.5
185	Bluewing-Toulon-Rock outcrop association-----	7,102	0.3
186	Bluewing-Hawsley association-----	5,125	0.2
190	Theon-Old Camp association-----	7,449	0.3
191	Theon-Singatse-Rock outcrop association-----	80,755	3.3
192	Theon very gravelly sandy loam, 8 to 30 percent slopes-----	2,659	0.1
193	Theon-Mirkwood-Rock outcrop association-----	21,082	0.9
194	Theon-Hooplite-Singatse association-----	3,715	0.2
199	Theon-Olac-Singatse association-----	3,515	0.1
200	Pirouette-Osobb-Rock outcrop association-----	50,384	2.0
201	Pirouette-Osobb-Celeton association-----	22,431	0.9
203	Pirouette-Hawsley association-----	5,878	0.2
204	Pirouette-Osobb-Isolde association-----	8,828	0.4
206	Pirouette-Osobb-Old Camp association-----	2,668	0.1
207	Pirouette-Rezave-Osobb association-----	3,148	0.1
208	Pirouette-Theon-Rubble land association-----	3,951	0.2
210	Biddleman association-----	12,201	0.5
211	Biddleman, eroded-Trocken-Biddleman association-----	20,598	0.8
213	Biddleman-Trocken association-----	4,207	0.2
214	Biddleman-Trocken-Ruhe association-----	4,745	0.2
215	Biddleman-Isolde association-----	4,716	0.2
216	Biddleman-Bluewing-Trocken association-----	2,311	*
220	Bango-Stumble association-----	36,798	1.5
221	Bango-Appian association-----	10,511	0.4
222	Bango-Playas-Chuckles association-----	5,110	0.2
230	Uripnes-Budihol-Rock outcrop association-----	9,880	0.4
231	Uripnes-Budihol-Chill association-----	11,206	0.5
232	Uripnes-Rock outcrop association-----	3,008	0.1
240	Watoopah-Genegraf-Buckaroo association-----	2,343	*
241	Watoopah-Buckaroo-Wholan association-----	3,864	0.2
250	Rezave-Singatse-Rock outcrop association-----	4,573	0.2

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
260	Appian-Playas association-----	2,120	*
261	Appian loamy sand, 0 to 2 percent slopes-----	4,914	0.2
262	Appian-Juva-Bango association-----	7,269	0.3
270	Fubble-Nicanor association-----	9,013	0.4
280	Trocken-Chuckles association-----	10,642	0.4
281	Trocken-Ragtown association-----	12,780	0.5
283	Trocken-Bluewing association-----	17,858	0.7
284	Trocken very gravelly sandy loam, 2 to 15 percent slopes-----	6,655	0.3
290	Ruxley gravelly clay loam, 0 to 2 percent slopes-----	701	*
300	Old Camp-Colbar-Rock outcrop association, steep-----	68,236	2.8
301	Old Camp-Mirkwood-Nemico association-----	17,423	0.7
302	Old Camp-Singatse-Rock outcrop association-----	22,528	0.9
304	Old Camp-Bombadil-Loomer association-----	10,187	0.4
305	Old Camp-Colbar-Rock outcrop association-----	5,388	0.2
307	Old Camp-Theon-Rock outcrop association-----	8,572	0.3
308	Old Camp-Clan Alpine-Colbar association-----	19,699	0.8
309	Old Camp-Pickup-Loomer association-----	4,589	0.2
310	Rednik-Trocken-Bluewing association-----	23,222	0.9
311	Rednik-Trocken-Genegraf association-----	30,633	1.2
313	Rednik-Ricert-Trocken association-----	8,886	0.4
315	Rednik-Genegraf-Barnmot association-----	5,812	0.2
316	Rednik association-----	2,366	*
317	Rednik-Cleaver-Trocken association-----	5,573	0.2
320	Jung-Old Camp-Rock outcrop association-----	10,370	0.4
321	Jung-Desatoya-Roca association-----	7,157	0.3
322	Jung-Puett-Buffaran association-----	1,549	*
324	Jung-Clan Alpine-Colbar association-----	12,271	0.5
325	Jung-Old Camp-Clan Alpine association-----	19,869	0.8
330	Settlement-Louderback-Rustigate association-----	31,206	1.3
331	Settlement-Chuckles-Rustigate association-----	14,193	0.6
340	Slaw-Juva-Wholan association-----	9,106	0.4
341	Slaw-Chuckles association-----	9,042	0.4
342	Slaw-Mazuma-Hessing association-----	3,849	0.2
343	Slaw-Trocken-Chuckles association-----	17,387	0.7
344	Slaw-Ragtown association-----	414	*
350	Ricert-Pineval association-----	10,474	0.4
351	Ricert-Chilper-Pineval association-----	12,336	0.5
352	Ricert-Desatoya-Pineval association-----	6,160	0.2
353	Ricert-Trocken-Pineval association-----	17,013	0.7
358	Ricert-Desatoya-Trocken association-----	5,130	0.2
359	Ricert-Celeton-Trocken association-----	4,315	0.2
360	Ricert-Trocken-Rebel association-----	2,581	0.1
370	Duco-Clan Alpine-Jung association-----	7,434	0.3
371	Duco-Clan Alpine-Old Camp association-----	22,350	0.9
373	Duco-Itca-Puett association-----	6,388	0.3
380	Itca-Clan Alpine-Rock outcrop association-----	5,538	0.2
381	Itca-Reluctan-Walti association-----	69,860	2.8
390	Defler-Pineval association-----	6,507	0.3
391	Defler-Trocken association-----	5,929	0.2
400	Chuckles-Playas complex-----	14,119	0.6
401	Chuckles-Bango association-----	9,242	0.4
402	Chuckles-Playas-Slaw association-----	4,410	0.2
404	Chuckles-Settlement-Rebel association-----	9,201	0.4
410	Buffaran-Desatoya association-----	3,173	0.1
411	Buffaran-Rebel-Puett association-----	1,859	*
420	Trocken-Hessing-Dun Glen association-----	9,148	0.4
422	Trocken-Hessing-Pineval association-----	12,054	0.5
423	Trocken-Bluewing association-----	7,207	0.3
425	Trocken-Hessing-Defler association-----	5,008	0.2
430	Kram-Attella-Rock outcrop association-----	13,312	0.5
432	Kram-Findout-Rock outcrop association-----	7,348	0.3

See footnote at end of table.



TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
433	Kram-Hopeka-Rock outcrop association-----	4,182	0.2
440	Ravenswood-Itca-Walti association-----	12,479	0.5
450	Wholan-Defler association-----	5,828	0.2
460	Juva-Wholan-Stumble association-----	5,694	0.2
470	Hessing-Wholan-Dun Glen association-----	11,487	0.5
471	Hessing-Dun Glen-Bango association-----	2,407	*
480	Yody-Buffaran-Pineval association-----	18,780	0.8
481	Yody-Ricert-Pineval association-----	8,552	0.3
484	Yody-Pineval association-----	10,845	0.4
491	Pineval-Rebel-Wholan association-----	6,211	0.3
492	Pineval-Rebel association-----	8,677	0.4
494	Pineval-Buckaroo-Rebel association-----	2,622	0.1
500	Louderback-Rustigate-Isolde association-----	7,665	0.3
511	Grumbler-Pickup association-----	476	*
520	Pineval-Bluewing-Inmo association-----	1,923	*
530	Cleaver-Trocken-Bluewing association-----	8,353	0.3
532	Cleaver-Ricert-Barnmot association-----	10,154	0.4
533	Cleaver-Buffaran association-----	2,156	*
535	Cleaver-Bundorf association-----	7,857	0.3
536	Cleaver-Rednik association-----	3,411	0.1
537	Cleaver-Otomo association-----	2,918	0.1
538	Cleaver-Genegraf-Roic association-----	5,803	0.2
540	Douhide-Itca-Ravenswood association-----	10,143	0.4
551	Yerington loamy fine sand, 2 to 4 percent slopes-----	275	*
560	Izod-Rock outcrop association-----	2,971	0.1
572	Rawe-Malpais association-----	94	*
580	Welch loam, 2 to 8 percent slopes-----	226	*
590	Rebel-Pineval-Yody association-----	7,458	0.3
591	Rebel loam, 0 to 2 percent slopes-----	3,598	0.1
592	Rebel-Wholan-Pineval association-----	3,187	0.1
600	Hooten-Bango-Isolde association-----	1,213	*
610	Barnmot-Bluewing-Badland association-----	4,246	0.2
620	Findout-Uripnes-Singatse association-----	3,569	0.1
621	Findout-Izod-Rock outcrop association-----	16,334	0.7
622	Findout-Old Camp-Rock outcrop association-----	2,297	*
640	Mazuma-Bango association-----	3,108	0.1
643	Mazuma-Bluewing association-----	12,265	0.5
644	Mazuma-Toulon-Chuckles association-----	2,198	*
645	Mazuma very fine sandy loam, 0 to 4 percent slopes-----	2,052	*
650	Labou-Rock outcrop complex-----	456	*
660	Loomer-Duco association-----	7,326	0.3
662	Loomer-Bombadil-Old Camp association-----	13,550	0.5
670	Celeton-Genegraf-Bedwyr association-----	4,404	0.2
671	Celeton-Bedwyr-Watoopah association-----	1,856	*
672	Celeton-Barnmot-Chilper association-----	3,166	0.1
680	Bombadil-Old Camp association-----	7,521	0.3
691	Osobb-Singatse-Pirouette association-----	5,167	0.2
700	Clan Alpine-Itca-Old Camp association-----	1,864	*
710	Luning-Izo association-----	1,844	*
730	Hooplite-Theon-Old Camp association-----	12,385	0.5
731	Hooplite-Old Camp-Singatse association-----	9,260	0.4
732	Hooplite-Old Camp-Puett association-----	6,152	0.2
733	Hooplite-Old Camp-Jung association-----	14,771	0.6
734	Hooplite-Theon-Puett association-----	2,396	*
735	Hooplite-Old Camp-Duco association-----	1,492	*
740	Packer-Layview-Hapgood association-----	21,469	0.9
741	Packer-Hapgood-Rock outcrop association-----	117	*
760	Burnborough-Cleavage-Welch association-----	3,262	0.1
761	Burnborough-Cleavage-Reluctan association-----	89	*
770	Chilper-Bundorf-Trocken association-----	4,625	0.2
772	Chilper-Trocken-Jerval association-----	21,303	0.9

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
790	Jacratz-Nayfan association-----	16,730	0.7
800	Bedwyr-Celeton association-----	3,141	0.1
802	Bedwyr-Bedzee-Jobpeak association-----	6,275	0.3
820	Aboten-Inmo-Bluewing association-----	4,985	0.2
830	Corral-Celeton-Bedwyr association-----	1,774	*
840	Belate-Roca-Cleavage association-----	11,985	0.5
850	Walti-Roca-Belate association-----	5,012	0.2
860	Teguro-Colbar-Cleavage association-----	6,421	0.3
870	Chill-Cleavage association-----	2,177	*
880	Coppereid-Singatse-Findout association-----	9,584	0.4
900	Playas-----	227,039	9.2
901	Dune land-Isolde association-----	10,085	0.4
902	Badland-----	2,811	0.1
903	Badland-Rebel-Yody association-----	145	*
910	Theriot-Findout-Rock outcrop association-----	4,139	0.2
930	Layview-Packer-Hapgood association-----	6,610	0.3
940	Old Camp-Rubble land association-----	13,075	0.5
960	Kolda-Umberland association-----	766	*
970	Jobpeak-Teguro-Rock outcrop association-----	36,673	1.5
980	Madeline-Millerlux association-----	520	*
990	Millerlux-Ninemile-Madeline association-----	422	*
1000	Stumble loamy sand, 2 to 4 percent slopes-----	3,113	0.1
1010	Downeyville-Stewval-Blacktop association-----	8,114	0.3
1011	Downeyville-Blacktop association-----	14,725	0.6
1012	Downeyville, moist-Downeyville-Blacktop association-----	2,419	*
1013	Downeyville-Gabbvally association-----	5,625	0.2
1020	Unsel-Annaw-Izo association-----	6,013	0.2
1023	Unsel-Pineval association-----	3,589	0.1
1024	Unsel-Desatoya-Roic association-----	3,628	0.1
1025	Unsel-Desatoya-Pineval association-----	5,781	0.2
1026	Unsel-Pineval-Defler association-----	1,606	*
1027	Unsel-Roic-Annaw association-----	2,077	*
1030	Goldyke-Blacktop-Koyen association-----	2,230	*
1040	Terlco-Annaw-Izo association-----	2,708	0.1
1050	Ceejay-Olac-Rock outcrop association-----	5,915	0.2
1061	Olac-Theon-Pirouette association-----	4,154	0.2
1062	Olac-Old Camp-Ceejay association-----	6,194	0.3
1071	Ganaflan-Bluewing-Trocken association-----	7,574	0.3
1090	Umberland-Isolde association-----	4,854	0.2
1100	Theon-Olac association-----	2,548	0.1
1101	Theon steep, association-----	2,507	0.1
1102	Theon association-----	11,829	0.5
1104	Theon-Roic-Singatse association-----	3,589	0.1
1120	Patna-Hawsley-Juva association-----	8,215	0.3
1121	Patna sand, 0 to 4 percent slopes-----	233	*
1130	Malpais complex-----	368	*
1140	Roic-Biddleman-Hooten association-----	2,435	*
1142	Roic-Mazuma-Celeton association-----	3,216	0.1
1143	Roic-Trocken-Celeton association-----	7,591	0.3
1144	Roic-Singatse-Celeton association-----	11,906	0.5
1145	Roic-Patna association-----	1,469	*
1150	Phing-Buffaran association-----	3,714	0.1
1160	Sojur-Singatse association-----	3,314	0.1
1171	Tocan-Aboten association-----	4,443	0.2
1180	Jerval-Trocken association-----	3,844	0.2
1200	Arclay very gravelly coarse sandy loam, 4 to 15 percent slopes-----	161	*
1210	Biga-Granshaw-Labkey association-----	4,562	0.2
1211	Biga gravelly coarse sandy loam, 2 to 8 percent slopes-----	3,747	0.2
1212	Biga-Roic-Labkey association-----	1,426	*
1220	Labkey gravelly sandy loam, 2 to 8 percent slopes-----	1,314	*
1230	Genegraf-Bluewing-Dorper association-----	682	*

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
1231	Genegraf-Trocken-Bluewing association-----	22,252	0.9
1232	Genegraf-Rednik-Trocken association-----	27,055	1.1
1233	Genegraf-Buckaroo-Bluewing association-----	19,631	0.8
1280	Soar-Arclay association-----	915	*
1290	Slocave-Vium association-----	890	*
1300	Lovelock silt loam, drained-----	2,728	0.1
1301	Lovelock silt loam, rarely flooded-----	4,192	0.2
1320	Gardella gravelly silt loam, 0 to 2 percent slopes-----	83	*
1330	Parran silty clay, 0 to 2 percent slopes-----	4,299	0.2
1331	Parran-Hawsley complex-----	470	*
1332	Parran-Umberland association-----	2,476	*
1340	Inmo association-----	219	*
W	Water-----	2,164	*
	Total-----	2,476,134	100.0

\* Less than 0.1 percent.



TABLE 5.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE

(Yields are those that can be expected under a high level of irrigated management by component name. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Alfalfa hay	Grass hay
		Tons	Tons
340: Slaw-----	3W	4.5	---
Juva-----	2W	5.0	---
Wholan-----	2W	5.0	---
341: Slaw-----	3W	4.5	---
Chuckles-----	3S	4.5	---
342: Slaw-----	3W	4.5	---
Mazuma-----	3S	5.0	---
Hessing-----	3E	5.0	---
343: Slaw-----	3W	4.5	---
Trocken-----	4S	4.5	---
Chuckles-----	3S	4.5	---
400: Chuckles-----	3S	4.5	---
Playas-----	--	---	---
401: Chuckles-----	3S	4.5	---
Bango-----	3S	4.5	---
404: Chuckles-----	3S	4.5	---
404: Settlement-----	6W	5.0	---
Rebel-----	2C	5.0	---
420: Trocken-----	4E	4.5	---
Hessing-----	3E	5.0	---
Dun Glen-----	2E	5.0	---
425: Trocken-----	4E	4.5	---
Hessing-----	3E	5.0	---
Defler-----	4E	5.0	---
470: Hessing-----	3E	5.0	---
Wholan-----	2W	5.0	---
Dun Glen-----	2E	5.0	---
580: Welch-----	6W	---	1.0



TABLE 6.--SUITABILITY FOR RANGELAND SEEDING

Soil name and map symbol	Limitation rating	Restrictive features
100:		
Budihol-----	Poorly suited-----	Droughty.
Chill-----	Poorly suited-----	Droughty, rooting depth.
Rock Outcrop-----	Not rated-----	
102:		
Budihol-----	Poorly suited-----	Droughty.
Minneha-----	Poorly suited-----	Droughty.
Rock Outcrop-----	Not rated-----	
110:		
Bimmer-----	Poorly suited-----	Too arid, droughty, depth to rock.
Chill-----	Poorly suited-----	Droughty, rooting depth.
120:		
Mirkwood-----	Poorly suited-----	Too arid, droughty, small stones.
Nemico-----	Poorly suited-----	Too arid, droughty, rooting depth.
Rock Outcrop-----	Not rated-----	
130:		
Bedwyr-----	Poorly suited-----	Too arid, droughty, rooting depth.
Bedzee-----	Poorly suited-----	Droughty, rooting depth, excess salt.
Loomer-----	Poorly suited-----	Droughty, rooting depth.
140:		
Hawsley-----	Poorly suited-----	Too arid, droughty, soil blowing.
141:		
Hawsley-----	Poorly suited-----	Too arid, droughty, soil blowing.
Isolde-----	Poorly suited-----	Too arid, too sandy.
142:		
Appian-----	Poorly suited-----	Too arid, too sandy, rooting depth.
Hawsley-----	Poorly suited-----	Too arid, droughty, soil blowing.
Ruhe-----	Poorly suited-----	Too arid, droughty, too sandy.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
143: Ganges-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Hawsley-----	Poorly suited-----	Too arid, droughty, soil blowing.
144: Hawsley-----	Poorly suited-----	Too arid, droughty, soil blowing.
Pirouette-----	Poorly suited-----	Too arid, droughty, small stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
146: Hawsley-----	Poorly suited-----	Too arid, droughty, soil blowing.
Juva-----	Poorly suited-----	Too arid, excess sodium.
147: Bluewing-----	Poorly suited-----	Too arid, droughty.
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Hawsley-----	Poorly suited-----	Too arid, droughty, soil blowing.
150: Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
152: Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Rezave-----	Poorly suited-----	Too arid, droughty, rooting depth.
Watoopah-----	Suited-----	Too arid, droughty.
153: Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.



TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
154:		
Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Genegraf-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
155:		
Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
Pineval-----	Suited-----	Too arid, droughty.
158:		
Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Wholan-----	Poorly suited-----	Too arid, excess salt.
159:		
Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
160:		
Rock Outcrop-----	Not rated-----	
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
161:		
Rock Outcrop-----	Not rated-----	
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
Uripnes-----	Poorly suited-----	Too arid, droughty, small stones.
162:		
Rezave-----	Poorly suited-----	Too arid, droughty, rooting depth.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
164:		
Loomer-----	Poorly suited-----	Droughty, rooting depth.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
170:		
Dune Land-----	Poorly suited-----	Too arid, droughty, too sandy.
Isolde-----	Poorly suited-----	Too arid, too sandy, soil blowing.
Pirouette-----	Poorly suited-----	Too arid, droughty, too sandy.
171:		
Appian-----	Poorly suited-----	Too arid, too sandy, rooting depth.
Isolde-----	Poorly suited-----	Too arid, too sandy, excess salt.
Parran-----	Poorly suited-----	Too arid, excess salt, excess sodium.
172:		
Hawsley-----	Poorly suited-----	Too arid, droughty.
Isolde-----	Poorly suited-----	Too arid, too sandy, soil blowing.
Pirouette-----	Poorly suited-----	Too arid, droughty, too sandy.
173:		
Isolde-----	Poorly suited-----	Too arid, too sandy, excess salt.
174:		
Isolde-----	Poorly suited-----	Too arid, too sandy, excess salt.
Ragtown-----	Poorly suited-----	Too arid, excess salt.
180:		
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Inmo-----	Poorly suited-----	Too arid, droughty.
181:		
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
184:		
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Pineval-----	Poorly suited-----	Small stones.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
185:		
Bluewing-----	Poorly suited-----	Too arid, droughty.
Rock Outcrop-----	Not rated-----	
Toulon-----	Poorly suited-----	Too arid, droughty, small stones.
186:		
Bluewing-----	Poorly suited-----	Too arid, droughty.
Hawsley-----	Poorly suited-----	Too arid, droughty.
190:		
Old Camp-----	Poorly suited-----	Droughty, large stones, rooting depth.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
191:		
Rock Outcrop-----	Not rated-----	
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
192:		
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
193:		
Mirkwood-----	Poorly suited-----	Too arid, droughty, small stones.
Rock Outcrop-----	Not rated-----	
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
194:		
Hooplite-----	Poorly suited-----	Droughty, small stones.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
199:		
Olac-----	Poorly suited-----	Droughty, small stones.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
200:		
Osobb-----	Poorly suited-----	Too arid, droughty, small stones.
Pirouette-----	Poorly suited-----	Too arid, droughty, small stones.
Rock Outcrop-----	Not rated-----	
201:		
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Osobb-----	Poorly suited-----	Too arid, droughty, small stones.
Pirouette-----	Poorly suited-----	Too arid, droughty, small stones.
203:		
Hawsley-----	Poorly suited-----	Too arid, droughty.
Pirouette-----	Poorly suited-----	Too arid, droughty, small stones.
204:		
Isolde-----	Poorly suited-----	Too arid, too sandy.
Osobb-----	Poorly suited-----	Too arid, droughty, small stones.
Pirouette-----	Poorly suited-----	Too arid, droughty, small stones.
206:		
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Osobb-----	Poorly suited-----	Too arid, droughty, small stones.
Pirouette-----	Poorly suited-----	Too arid, droughty, small stones.
207:		
Osobb-----	Poorly suited-----	Too arid, droughty, small stones.
Pirouette-----	Poorly suited-----	Too arid, droughty, small stones.
Rezave-----	Poorly suited-----	Too arid, droughty, rooting depth.
208:		
Pirouette-----	Poorly suited-----	Too arid, droughty, small stones.
Rubble Land-----	Poorly suited-----	Too arid, droughty, large stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
210: Biddleman-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Biddleman-----	Poorly suited-----	Too arid, excess salt, excess sodium.
211: Biddleman-----	Poorly suited-----	Too arid, droughty, small stones.
Biddleman-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
213: Biddleman-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
214: Biddleman-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Ruhe-----	Poorly suited-----	Too arid, droughty, too sandy.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
215: Biddleman-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Isolde-----	Poorly suited-----	Too arid, too sandy.
216: Biddleman-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Bluewing-----	Poorly suited-----	Too arid, droughty.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
220: Bango-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Stumble-----	Poorly suited-----	Too arid, droughty, too sandy.
221: Appian-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Bango-----	Poorly suited-----	Too arid, too sandy, rooting depth.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
222:		
Bango-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Chuckles-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Playas-----	Poorly suited-----	Too arid, droughty, rooting depth.
230:		
Budihol-----	Poorly suited-----	Droughty.
Rock Outcrop-----	Not rated-----	
Uripnes-----	Poorly suited-----	Too arid, droughty, small stones.
231:		
Budihol-----	Poorly suited-----	Droughty.
Chill-----	Poorly suited-----	Droughty, rooting depth.
Uripnes-----	Poorly suited-----	Too arid, droughty, small stones.
232:		
Rock Outcrop-----	Not rated-----	
Uripnes-----	Poorly suited-----	Too arid, droughty, small stones.
240:		
Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Genegraf-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Watoopah-----	Suited-----	Too arid, droughty.
241:		
Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Watoopah-----	Poorly suited-----	Soil blowing.
Wholan-----	Poorly suited-----	Too arid, excess salt.
250:		
Rezave-----	Poorly suited-----	Too arid, droughty, rooting depth.
Rock Outcrop-----	Not rated-----	
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
260:		
Appian-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Playas-----	Poorly suited-----	Too arid, droughty, rooting depth.
261:		
Appian-----	Poorly suited-----	Too arid, too sandy, rooting depth.
262:		
Appian-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Bango-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Juva-----	Poorly suited-----	Too arid, excess sodium.
270:		
Fubble-----	Suited-----	Too arid, droughty, depth to rock.
Nicanor-----	Poorly suited-----	Droughty, depth to rock.
280:		
Chuckles-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, excess salt, excess sodium.
281:		
Ragtown-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, too sandy, excess salt.
283:		
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
284:		
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
290:		
Huxley-----	Poorly suited-----	Too arid, small stones, excess salt.
300:		
Colbar-----	Suited-----	Too arid, droughty, large stones.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock Outcrop-----	Not rated-----	

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
301:		
Mirkwood-----	Poorly suited-----	Too arid, droughty, small stones.
Nemico-----	Poorly suited-----	Too arid, droughty, rooting depth.
Old Camp-----	Poorly suited-----	Droughty, large stones, rooting depth.
302:		
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock Outcrop-----	Not rated-----	
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
304:		
Bombadil-----	Poorly suited-----	Droughty.
Loomer-----	Poorly suited-----	Droughty, rooting depth.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
305:		
Colbar-----	Poorly suited-----	Small stones.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock Outcrop-----	Not rated-----	
307:		
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock Outcrop-----	Not rated-----	
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
308:		
Clan Alpine-----	Poorly suited-----	Small stones.
Colbar-----	Suited-----	Too arid, droughty, large stones.
Old Camp-----	Poorly suited-----	Droughty, large stones, rooting depth.
309:		
Loomer-----	Poorly suited-----	Droughty, rooting depth.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Pickup-----	Poorly suited-----	Small stones.



TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
310:		
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
311:		
Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
313:		
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
Ricert-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, too sandy, small stones.
315:		
Barnmot-----	Poorly suited-----	Too arid, excess salt.
Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
316:		
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
317:		
Cleaver-----	Poorly suited-----	Too arid, droughty, rooting depth.
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
320:		
Jung-----	Poorly suited-----	Droughty, small stones, rooting depth.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock Outcrop-----	Not rated-----	

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
321: Desatoya-----	Poorly suited-----	Small stones, rooting depth.
Jung-----	Poorly suited-----	Droughty, small stones, rooting depth.
Roca-----	Poorly suited-----	Rooting depth.
322: Buffaran-----	Poorly suited-----	Droughty, rooting depth.
Jung-----	Poorly suited-----	Droughty, small stones, rooting depth.
Puett-----	Poorly suited-----	Droughty.
324: Clanalpine-----	Poorly suited-----	Small stones.
Colbar-----	Suited-----	Too arid, droughty, large stones.
Jung-----	Poorly suited-----	Droughty, small stones, rooting depth.
325: Clanalpine-----	Poorly suited-----	Small stones.
Jung-----	Poorly suited-----	Droughty, small stones, rooting depth.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
330: Louderback-----	Poorly suited-----	Droughty, excess sodium.
Rustigate-----	Suited-----	Too arid, excess salt, excess sodium.
Settlement-----	Poorly suited-----	Excess salt, excess sodium.
331: Chuckles-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Rustigate-----	Suited-----	Too arid, excess salt, excess sodium.
Settlement-----	Poorly suited-----	Excess salt, excess sodium.
340: Juva-----	Poorly suited-----	Too arid, excess sodium.
Slaw-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Wholan-----	Poorly suited-----	Too arid, excess salt.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
341: Chuckles-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Slaw-----	Poorly suited-----	Too arid, rooting depth, excess salt.
342: Hessing-----	Poorly suited-----	Too arid.
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Slaw-----	Poorly suited-----	Too arid, rooting depth, excess salt.
343: Chuckles-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Slaw-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Trocken-----	Poorly suited-----	Too arid, small stones, excess salt.
344: Ragtown-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Slaw-----	Poorly suited-----	Too arid, rooting depth, excess salt.
350: Pineval-----	Suited-----	Too arid, droughty.
Ricert-----	Poorly suited-----	Too arid, excess salt, excess sodium.
351: Chilper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Pineval-----	Suited-----	Too arid, droughty.
Ricert-----	Poorly suited-----	Too arid, excess salt, excess sodium.
352: Desatoya-----	Poorly suited-----	Small stones, rooting depth.
Pineval-----	Poorly suited-----	Small stones.
Ricert-----	Poorly suited-----	Too arid, excess salt, excess sodium.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
353:		
Pineval-----	Suited-----	Too arid, droughty.
Ricert-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
358:		
Desatoya-----	Poorly suited-----	Small stones, rooting depth.
Ricert-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, too sandy, small stones.
359:		
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Ricert-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
360:		
Rebel-----	Suited-----	Too arid, excess salt.
Ricert-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, too sandy, small stones.
370:		
Clanalpine-----	Poorly suited-----	Small stones.
Duco-----	Poorly suited-----	Droughty, small stones, rooting depth.
Jung-----	Poorly suited-----	Droughty, small stones, rooting depth.
371:		
Clanalpine-----	Poorly suited-----	Small stones.
Duco-----	Poorly suited-----	Droughty, small stones, rooting depth.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
373:		
Duco-----	Poorly suited-----	Droughty, small stones, rooting depth.
Itca-----	Poorly suited-----	Droughty, rooting depth.
Puett-----	Poorly suited-----	Too arid, droughty.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
380:		
Clan Alpine-----	Poorly suited-----	Small stones.
Itca-----	Poorly suited-----	Droughty, rooting depth.
Rock Outcrop-----	Not rated-----	
381:		
Itca-----	Poorly suited-----	Droughty, small stones, rooting depth.
Reluctan-----	Poorly suited-----	Small stones.
Walti-----	Poorly suited-----	Rooting depth.
390:		
Defler-----	Poorly suited-----	Too arid.
Pineval-----	Suited-----	Too arid, droughty.
391:		
Defler-----	Poorly suited-----	Too arid.
Trocken-----	Poorly suited-----	Too arid, too sandy, small stones.
400:		
Chuckles-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Playas-----	Poorly suited-----	Too arid, droughty, rooting depth.
401:		
Bango-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Chuckles-----	Poorly suited-----	Too arid, excess salt, excess sodium.
402:		
Chuckles-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Playas-----	Poorly suited-----	Too arid, droughty, rooting depth.
Slaw-----	Poorly suited-----	Too arid, rooting depth, excess salt.
404:		
Chuckles-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Rebel-----	Suited-----	Too arid, excess salt.
Settlement-----	Poorly suited-----	Excess salt, excess sodium.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
410: Buffaran-----	Poorly suited-----	Droughty, rooting depth.
Desatoya-----	Poorly suited-----	Small stones, rooting depth.
411: Buffaran-----	Poorly suited-----	Droughty, rooting depth.
Fuett-----	Poorly suited-----	Droughty.
Rebel-----	Suited-----	Too arid, excess salt.
420: Dun Glen-----	Poorly suited-----	Too arid, excess sodium.
Hessing-----	Poorly suited-----	Too arid.
Trocken-----	Poorly suited-----	Too arid, too sandy, small stones.
422: Hessing-----	Poorly suited-----	Too arid.
Pineval-----	Suited-----	Too arid, droughty.
Trocken-----	Poorly suited-----	Too arid, too sandy, small stones.
423: Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
Trocken-----	Poorly suited-----	Too arid, excess salt, excess sodium.
425: Defler-----	Poorly suited-----	Too arid.
Hessing-----	Poorly suited-----	Too arid.
Trocken-----	Poorly suited-----	Too arid, too sandy, small stones.
430: Attella-----	Poorly suited-----	Droughty, small stones, depth to rock.
Kram-----	Poorly suited-----	Droughty, small stones, excess salt.
Rock Outcrop-----	Not rated-----	

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
432:		
Findout-----	Poorly suited-----	Too arid, droughty, small stones.
Kram-----	Poorly suited-----	Droughty, small stones, excess salt.
Rock Outcrop-----	Not rated-----	
433:		
Hopeka-----	Poorly suited-----	Droughty, small stones, depth to rock.
Kram-----	Poorly suited-----	Droughty, small stones, excess salt.
Rock Outcrop-----	Not rated-----	
440:		
Itca-----	Poorly suited-----	Droughty, rooting depth.
Ravenswood-----	Poorly suited-----	Rooting depth.
Walti-----	Poorly suited-----	Rooting depth.
450:		
Defler-----	Poorly suited-----	Too arid.
Wholan-----	Poorly suited-----	Too arid, excess salt.
Wholan-----	Poorly suited-----	Too arid, excess salt.
460:		
Juva-----	Poorly suited-----	Too arid, excess sodium.
Stumble-----	Poorly suited-----	Too arid, droughty, too sandy.
Wholan-----	Poorly suited-----	Too arid, excess salt.
470:		
Dun Glen-----	Poorly suited-----	Too arid, excess sodium.
Hessing-----	Poorly suited-----	Too arid.
Wholan-----	Poorly suited-----	Too arid, excess salt.
471:		
Bango-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Dun Glen-----	Poorly suited-----	Too arid, excess sodium.
Hessing-----	Poorly suited-----	Too arid.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
480:		
Buffaran-----	Poorly suited-----	Droughty, rooting depth.
Pineval-----	Suited-----	Too arid, droughty.
Yody-----	Poorly suited-----	Rooting depth.
481:		
Pineval-----	Suited-----	Too arid, droughty.
Ricert-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Yody-----	Poorly suited-----	Rooting depth.
484:		
Pineval-----	Suited-----	Too arid, droughty.
Yody-----	Poorly suited-----	Rooting depth.
491:		
Pineval-----	Suited-----	Too arid, droughty.
Rebel-----	Suited-----	Too arid, excess salt.
Wholan-----	Poorly suited-----	Too arid, excess salt.
492:		
Pineval-----	Suited-----	Too arid, droughty.
Rebel-----	Suited-----	Too arid, excess salt.
494:		
Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Pineval-----	Suited-----	Too arid, droughty.
Rebel-----	Suited-----	Too arid, excess salt.
500:		
Isolde-----	Poorly suited-----	Too arid, too sandy, excess salt.
Louderback-----	Poorly suited-----	Droughty, excess sodium, soil blowing.
Rustigate-----	Suited-----	Too arid, excess salt, excess sodium.



TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
511:		
Grumblen-----	Poorly suited-----	Droughty, small stones, rooting depth.
Pickup-----	Poorly suited-----	Small stones.
520:		
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Inmo-----	Poorly suited-----	Too arid, droughty, too sandy.
Pineval-----	Poorly suited-----	Too arid, small stones.
530:		
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Cleaver-----	Poorly suited-----	Too arid, droughty, rooting depth.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
532:		
Barnmot-----	Poorly suited-----	Too arid, excess salt.
Cleaver-----	Poorly suited-----	Too arid, droughty, rooting depth.
Ricert-----	Poorly suited-----	Too arid, excess salt, excess sodium.
533:		
Buffaran-----	Poorly suited-----	Droughty, rooting depth.
Cleaver-----	Poorly suited-----	Too arid, droughty, rooting depth.
535:		
Bundorf-----	Poorly suited-----	Too arid, droughty, rooting depth.
Cleaver-----	Poorly suited-----	Too arid, droughty, rooting depth.
536:		
Cleaver-----	Poorly suited-----	Too arid, droughty, rooting depth.
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
537:		
Cleaver-----	Poorly suited-----	Too arid, droughty, rooting depth.
Otomo-----	Poorly suited-----	Too arid, droughty, small stones.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
538:		
Cleaver-----	Poorly suited-----	Too arid, droughty, small stones.
Genegraf-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Roic-----	Poorly suited-----	Too arid, droughty, depth to rock.
540:		
Douhide-----	Poorly suited-----	Droughty, small stones, rooting depth.
Itca-----	Poorly suited-----	Droughty, rooting depth.
Ravenswood-----	Poorly suited-----	Rooting depth.
551:		
Yerington-----	Poorly suited-----	Too arid, too sandy, soil blowing.
560:		
Izod-----	Poorly suited-----	Droughty, small stones.
Rock Outcrop-----	Not rated-----	
572:		
Malpais-----	Poorly suited-----	Too arid, small stones, excess sodium.
Rawe-----	Poorly suited-----	Too arid, rooting depth.
580:		
Welch-----	Well suited-----	
590:		
Pineval-----	Suited-----	Too arid, droughty.
Rebel-----	Suited-----	Too arid, excess salt.
Yody-----	Poorly suited-----	Rooting depth.
591:		
Rebel-----	Suited-----	Too arid, excess salt.
592:		
Pineval-----	Suited-----	Too arid, droughty.
Rebel-----	Suited-----	Too arid, excess salt.
Wholan-----	Poorly suited-----	Too arid, excess salt.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
600:		
Bango-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Hooten-----	Poorly suited-----	Too arid, droughty, small stones.
Isolde-----	Poorly suited-----	Too arid, too sandy, excess salt.
610:		
Badland-----	Poorly suited-----	Too arid, droughty, excess salt.
Barnmot-----	Poorly suited-----	Too arid, excess salt, erodes easily.
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
620:		
Findout-----	Poorly suited-----	Too arid, droughty, small stones.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
Uripnes-----	Poorly suited-----	Too arid, droughty, small stones.
621:		
Findout-----	Poorly suited-----	Too arid, droughty, small stones.
Izod-----	Poorly suited-----	Droughty, small stones.
Rock Outcrop-----	Not rated-----	
622:		
Findout-----	Poorly suited-----	Too arid, droughty, small stones.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock Outcrop-----	Not rated-----	
640:		
Bango-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
643:		
Bluewing-----	Poorly suited-----	Too arid, droughty, small stones.
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
644:		
Chuckles-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Toulon-----	Poorly suited-----	Too arid, droughty, small stones.
645:		
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
650:		
Labou-----	Poorly suited-----	Too arid, droughty, rooting depth.
Rock Outcrop-----	Not rated-----	
660:		
Duco-----	Poorly suited-----	Droughty, small stones, rooting depth.
Loomer-----	Poorly suited-----	Droughty, small stones, rooting depth.
662:		
Bombadil-----	Poorly suited-----	Droughty.
Loomer-----	Poorly suited-----	Droughty, rooting depth.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
670:		
Bedwyr-----	Poorly suited-----	Too arid, droughty, rooting depth.
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
671:		
Bedwyr-----	Poorly suited-----	Too arid, droughty, rooting depth.
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Watoopah-----	Suited-----	Too arid, droughty.
672:		
Barnmot-----	Poorly suited-----	Too arid, excess salt.
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Chilper-----	Poorly suited-----	Too arid, rooting depth, excess salt.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
680:		
Bombadil-----	Poorly suited-----	Droughty, erodes easily.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
691:		
Osobb-----	Poorly suited-----	Too arid, droughty, small stones.
Pirouette-----	Poorly suited-----	Too arid, droughty, small stones.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
700:		
Clanalpine-----	Poorly suited-----	Small stones, erodes easily.
Itca-----	Poorly suited-----	Droughty, rooting depth.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
710:		
Izo-----	Poorly suited-----	Too arid, droughty, small stones.
Luning-----	Poorly suited-----	Too arid, droughty, soil blowing.
730:		
Hooplite-----	Poorly suited-----	Droughty, small stones.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
731:		
Hooplite-----	Poorly suited-----	Droughty, small stones.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
732:		
Hooplite-----	Poorly suited-----	Droughty, small stones.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Puett-----	Poorly suited-----	Droughty.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
733:		
Hooplite-----	Poorly suited-----	Droughty, small stones.
Jung-----	Poorly suited-----	Droughty, rooting depth.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
734:		
Hooplite-----	Poorly suited-----	Droughty, small stones.
Puett-----	Poorly suited-----	Droughty.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
735:		
Duco-----	Poorly suited-----	Droughty, small stones, rooting depth.
Hooplite-----	Poorly suited-----	Droughty, small stones.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
740:		
Hapgood-----	Poorly suited-----	Small stones.
Layview-----	Poorly suited-----	Too arid, droughty, small stones.
Packer-----	Poorly suited-----	Too arid, small stones.
741:		
Hapgood-----	Well suited-----	
Packer-----	Poorly suited-----	Too arid, small stones.
Rock Outcrop-----	Not rated-----	
760:		
Burnborough-----	Poorly suited-----	Small stones.
Cleavage-----	Poorly suited-----	Too arid, droughty, small stones.
Welch-----	Well suited-----	
761:		
Burnborough-----	Poorly suited-----	Small stones.
Cleavage-----	Poorly suited-----	Too arid, droughty, small stones.
Reluctan-----	Poorly suited-----	Small stones.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
770:		
Bundorf-----	Poorly suited-----	Too arid, droughty, rooting depth.
Chilper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Trocken-----	Poorly suited-----	Too arid, too sandy, small stones.
772:		
Chilper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Jerval-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Trocken-----	Poorly suited-----	Too arid, too sandy, small stones.
790:		
Jacratz-----	Poorly suited-----	Droughty, depth to rock, erodes easily.
Nayfan-----	Suited-----	Too arid, droughty.
800:		
Bedwyr-----	Poorly suited-----	Too arid, droughty, rooting depth.
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
802:		
Bedwyr-----	Poorly suited-----	Too arid, droughty, rooting depth.
Bedzee-----	Poorly suited-----	Droughty, rooting depth, excess salt.
Jobpeak-----	Poorly suited-----	Droughty, small stones, depth to rock.
820:		
Aboten-----	Poorly suited-----	Too arid, rooting depth, excess sodium.
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Inmo-----	Poorly suited-----	Too arid, droughty, small stones.
830:		
Bedwyr-----	Poorly suited-----	Too arid, droughty, rooting depth.
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Corral-----	Poorly suited-----	Droughty, erodes easily.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
840:		
Belate-----	Poorly suited-----	Small stones, erodes easily.
Cleavage-----	Poorly suited-----	Too arid, droughty, small stones.
Roca-----	Poorly suited-----	Rooting depth.
850:		
Belate-----	Poorly suited-----	Small stones.
Roca-----	Poorly suited-----	Rooting depth.
Walti-----	Poorly suited-----	Rooting depth.
860:		
Cleavage-----	Poorly suited-----	Too arid, droughty, small stones.
Colbar-----	Poorly suited-----	Small stones.
Teguro-----	Poorly suited-----	Droughty, rooting depth.
870:		
Chill-----	Poorly suited-----	Droughty, rooting depth.
Cleavage-----	Poorly suited-----	Droughty.
880:		
Coppereid-----	Poorly suited-----	Droughty, depth to rock, erodes easily.
Findout-----	Poorly suited-----	Too arid, droughty, small stones.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
900:		
Playas-----	Poorly suited-----	Too arid, droughty, rooting depth.
901:		
Dune Land-----	Poorly suited-----	Too arid, droughty, too sandy.
Isolde-----	Poorly suited-----	Too arid, too sandy.
902:		
Badland-----	Poorly suited-----	Too arid, droughty, excess salt.



TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
903:		
Badland-----	Poorly suited-----	Too arid, droughty, excess salt.
Rebel-----	Suited-----	Too arid, excess salt.
Yody-----	Poorly suited-----	Rooting depth.
910:		
Findout-----	Poorly suited-----	Too arid, droughty, small stones.
Rock Outcrop-----	Not rated-----	
Theriot-----	Poorly suited-----	Too arid, droughty, small stones.
930:		
Hapgood-----	Well suited-----	
Layview-----	Poorly suited-----	Too arid, droughty, small stones.
Packer-----	Poorly suited-----	Too arid, small stones.
940:		
Old Camp-----	Poorly suited-----	Droughty, large stones, rooting depth.
Old Camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rubble Land-----	Poorly suited-----	Too arid, droughty, large stones.
960:		
Kolda-----	Suited-----	Excess sodium.
Umberland-----	Poorly suited-----	Excess salt, excess sodium.
970:		
Jobpeak-----	Poorly suited-----	Droughty, small stones, depth to rock.
Rock Outcrop-----	Not rated-----	
Teguro-----	Poorly suited-----	Droughty, rooting depth.
980:		
Madeline-----	Poorly suited-----	Droughty.
Millerlux-----	Poorly suited-----	Too arid, rooting depth.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
990:		
Madeline-----	Poorly suited-----	Droughty.
Millerlux-----	Poorly suited-----	Too arid, rooting depth.
Ninemile-----	Poorly suited-----	Droughty, rooting depth.
1000:		
Stumble-----	Poorly suited-----	Too arid, droughty, too sandy.
1010:		
Blacktop-----	Poorly suited-----	Too arid, droughty, small stones.
Downeyville-----	Poorly suited-----	Too arid, droughty, small stones.
Stewval-----	Poorly suited-----	Droughty, small stones, depth to rock.
1011:		
Blacktop-----	Poorly suited-----	Too arid, droughty, small stones.
Downeyville-----	Poorly suited-----	Too arid, droughty, small stones.
1012:		
Blacktop-----	Poorly suited-----	Too arid, droughty, small stones.
Downeyville-----	Poorly suited-----	Too arid, droughty, small stones.
Downeyville-----	Poorly suited-----	Too arid, droughty, small stones.
1013:		
Downeyville-----	Poorly suited-----	Too arid, droughty, small stones.
Downeyville-----	Poorly suited-----	Too arid, droughty, small stones.
Gabbvally-----	Poorly suited-----	Droughty.
1020:		
Annaw-----	Poorly suited-----	Too arid.
Izo-----	Poorly suited-----	Too arid, droughty, small stones.
Unsel-----	Poorly suited-----	Too arid, small stones.
1023:		
Pineval-----	Suited-----	Too arid, droughty.
Unsel-----	Poorly suited-----	Too arid.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
1024:		
Desatoya-----	Poorly suited-----	Small stones, rooting depth.
Roic-----	Poorly suited-----	Too arid, droughty, depth to rock.
Unsel-----	Poorly suited-----	Too arid, small stones.
1025:		
Desatoya-----	Poorly suited-----	Small stones, rooting depth.
Pineval-----	Suited-----	Too arid, droughty.
Unsel-----	Poorly suited-----	Too arid.
1026:		
Defler-----	Poorly suited-----	Too arid.
Pineval-----	Suited-----	Too arid, droughty.
Unsel-----	Poorly suited-----	Too arid, small stones.
1027:		
Annaw-----	Poorly suited-----	Too arid, droughty, too sandy.
Roic-----	Poorly suited-----	Too arid, droughty, depth to rock.
Unsel-----	Poorly suited-----	Too arid, small stones.
1030:		
Blacktop-----	Poorly suited-----	Too arid, droughty, small stones.
Goldyke-----	Poorly suited-----	Too arid, droughty, depth to rock.
Koyen-----	Poorly suited-----	Too arid.
1040:		
Annaw-----	Poorly suited-----	Too arid, droughty, too sandy.
Izo-----	Poorly suited-----	Too arid, droughty, small stones.
Terlco-----	Poorly suited-----	Too arid, small stones, excess salt.
1050:		
Ceejay-----	Poorly suited-----	Droughty, rooting depth.
Olac-----	Poorly suited-----	Droughty, small stones.
Rock Outcrop-----	Not rated-----	

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
1061:		
Olac-----	Poorly suited-----	Droughty, small stones.
Pirouette-----	Poorly suited-----	Too arid, droughty, small stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
1062:		
Ceejay-----	Poorly suited-----	Droughty, rooting depth.
Olac-----	Poorly suited-----	Droughty, small stones.
Old Camp-----	Poorly suited-----	Too arid, droughty, small stones.
1071:		
Bluewing-----	Poorly suited-----	Too arid, droughty, small stones.
Ganaflan-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
1090:		
Isolde-----	Poorly suited-----	Too arid, too sandy, excess salt.
Umberland-----	Poorly suited-----	Too arid, excess salt, excess sodium.
1100:		
Olac-----	Poorly suited-----	Droughty, small stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
1101:		
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
1102:		
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
1104:		
Roic-----	Poorly suited-----	Too arid, droughty, depth to rock.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
1120:		
Hawsley-----	Poorly suited-----	Too arid, droughty.
Juva-----	Poorly suited-----	Too arid, excess sodium.
Patna-----	Poorly suited-----	Too arid, soil blowing.
1121:		
Patna-----	Poorly suited-----	Too arid, soil blowing.
1130:		
Malpais-----	Poorly suited-----	Too arid, small stones, excess sodium.
Malpais-----	Poorly suited-----	Too arid, droughty, small stones.
1140:		
Biddleman-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Hooten-----	Poorly suited-----	Too arid, droughty, small stones.
Roic-----	Poorly suited-----	Too arid, droughty, depth to rock.
1142:		
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Roic-----	Poorly suited-----	Too arid, droughty, depth to rock.
1143:		
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Roic-----	Poorly suited-----	Too arid, droughty, depth to rock.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
1144:		
Celeton-----	Poorly suited-----	Too arid, droughty, depth to rock.
Roic-----	Poorly suited-----	Too arid, droughty, depth to rock.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
1145:		
Patna-----	Poorly suited-----	Too arid.
Roic-----	Poorly suited-----	Too arid, droughty, depth to rock.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
1150: Buffaran-----	Poorly suited-----	Droughty, rooting depth.
Phing-----	Poorly suited-----	Rooting depth.
1160: Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
Sojur-----	Poorly suited-----	Too arid, droughty, small stones.
1171: Aboten-----	Poorly suited-----	Too arid, droughty, rooting depth.
Tocan-----	Poorly suited-----	Too arid.
1180: Jerval-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
1200: Arclay-----	Poorly suited-----	Droughty, rooting depth.
1210: Biga-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Granshaw-----	Poorly suited-----	Too arid.
Labkey-----	Poorly suited-----	Too arid.
1211: Biga-----	Poorly suited-----	Too arid, rooting depth, excess salt.
1212: Biga-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Labkey-----	Poorly suited-----	Too arid.
Roic-----	Poorly suited-----	Too arid, droughty, depth to rock.
1220: Labkey-----	Poorly suited-----	Too arid.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
1230:		
Bluewing-----	Poorly suited-----	Too arid, droughty.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
1231:		
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
1232:		
Genegraf-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
Trocken-----	Poorly suited-----	Too arid, droughty, too sandy.
1233:		
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Buckaroo-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Genegraf-----	Poorly suited-----	Too arid, rooting depth, excess salt.
1280:		
Arcley-----	Poorly suited-----	Droughty, rooting depth.
Soar-----	Poorly suited-----	Droughty, small stones.
Soar-----	Poorly suited-----	Droughty, small stones.
1290:		
Slocave-----	Poorly suited-----	Too arid, droughty, small stones.
Vium-----	Poorly suited-----	Too arid, droughty, small stones.
1300:		
Lovelock-----	Suited-----	Too arid, excess sodium.
1301:		
Lovelock-----	Poorly suited-----	Excess salt, excess sodium.
1320:		
Gardella-----	Poorly suited-----	Too arid, droughty, too sandy.

TABLE 6.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
1330: Parran-----	Poorly suited-----	Too arid, excess salt, excess sodium.
1331: Hawsley-----	Poorly suited-----	Too arid, droughty.
Parran-----	Poorly suited-----	Too arid, excess salt, excess sodium.
1332: Parran-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Umberland-----	Poorly suited-----	Excess salt, excess sodium.
1340: Inmo-----	Poorly suited-----	Too arid, droughty, too sandy.
Inmo-----	Poorly suited-----	Too arid, droughty, too sandy.
W: Water-----	Not rated-----	



TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

(Only the soils suitable for production of trees are listed)

Map symbol and soil name	Ordi- nation symbol	Management concerns					Potential productivity		
		Erosion hazard	Equip- ment Limita- tion	Seedling mortal- ity	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Volume of wood fiber  m3/ha
102: Budihol.									
Minneha-----	0R	Severe	Severe	Severe	Slight	Severe	Utah juniper----- Singleleaf pinyon---	46 46	--- ---
Rock Outcrop.									
308: Old Camp.									
Clanalpine-----	1R	Severe	Severe	Moderate	Slight	Moderate	Singleleaf pinyon---	75	1
Colbar.									
324: Jung.									
Clanalpine-----	1R	Severe	Severe	Moderate	Slight	Moderate	Singleleaf pinyon---	75	1
Colbar.									
325: Jung.									
Old Camp.									
Clanalpine-----	1R	Severe	Severe	Moderate	Slight	Moderate	Singleleaf pinyon---	75	1
370: Duco.	0X	Moderate	Moderate	Moderate	Slight	Severe	Singleleaf pinyon---	35	0
Clanalpine-----	1R	Severe	Severe	Moderate	Slight	Moderate	Singleleaf pinyon---	75	1

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordi- nation symbol	Management concerns					Potential productivity		
		Erosion hazard	Equip- ment Limita- tion	Seedling mortal- ity	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Volume of wood fiber
									m3/ha
370 (con.): Jung.									
371: Duco.	0X	Moderate	Moderate	Moderate	Slight	Severe	Singleleaf pinyon---	35	0
Clanalpine-----	1R	Severe	Severe	Moderate	Slight	Moderate	Singleleaf pinyon---	75	1
Old Camp.									
373: Duco.	0X	Moderate	Moderate	Moderate	Slight	Severe	Singleleaf pinyon---	35	0
Itca-----	1R	Moderate	Severe	Moderate	Slight	Moderate	Singleleaf pinyon---	75	1
Puett.									
380: Itca-----	1R	Severe	Severe	Moderate	Slight	Moderate	Utah juniper----- Singleleaf pinyon---	65 65	1 1
Clanalpine-----	0R	Severe	Severe	Moderate	Slight	Moderate	Singleleaf pinyon---	35	---
Rock Outcrop.									
381: Itca-----	1R	Severe	Severe	Moderate	Slight	Moderate	Utah juniper----- Singleleaf pinyon---	65 65	1 1
Reluctan.									
Walti.									
430: Kram-----	0R	Severe	Severe	Severe	Slight	Moderate	Utah juniper----- Singleleaf pinyon---	25 25	--- ---
Attella-----	0R	Severe	Severe	Severe	Slight	Slight	Utah juniper----- Singleleaf pinyon---	40 40	--- ---

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordi- nation symbol	Management concerns					Potential productivity		
		Erosion hazard	Equip- ment Limita- tion	Seedling mortal- ity	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Volume of wood fiber
									m3/ha
430 (con.): Rock Outcrop.									
432: Kram-----	OR	Severe	Severe	Severe	Slight	Moderate	Utah juniper----- Singleleaf pinyon---	25 25	--- ---
Findout. Rock Outcrop.									
433: Kram-----	OR	Severe	Severe	Severe	Slight	Moderate	Utah juniper----- Singleleaf pinyon---	25 25	--- ---
Hopeka-----	OR	Severe	Severe	Severe	Slight	Moderate	Utah juniper----- Singleleaf pinyon---	33 33	--- ---
Rock Outcrop.									
440: Ravenswood-----	OR	Severe	Severe	Slight	Slight	Moderate	Singleleaf pinyon---	55	---
Itca-----	1R	Severe	Severe	Moderate	Slight	Moderate	Utah juniper----- Singleleaf pinyon---	65 65	1 1
Walti.									
540: Doughide-----	1R	Severe	Severe	Moderate	Slight	Moderate	Utah juniper----- Singleleaf pinyon---	75 75	1 1
Itca-----	1R	Severe	Severe	Moderate	Slight	Moderate	Utah juniper----- Singleleaf pinyon---	65 65	1 1
Ravenswood-----	OR	Severe	Severe	Slight	Slight	Moderate	Singleleaf pinyon---	55	---
660: Loomer.									
Duco-----	OX	Moderate	Moderate	Moderate	Slight	Severe	Singleleaf pinyon---	35	0
700: Clanalpine-----	1R	Severe	Severe	Moderate	Slight	Moderate	Singleleaf pinyon---	75	1

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

[illegible]

TABLE 8.--BUILDING SITE DEVELOPMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
100: Budihol-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Chill-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Rock Outcrop.						
102: Budihol-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Minneha-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Rock Outcrop.						
110: Bimmer-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Chill-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
120: Nemico-----	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: excess sodium, slope, depth to rock
Mirkwood-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
130: Bedzee-----	Severe: depth to rock, slope	Severe: shrink-swell, slope	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: slope, depth to rock
Loomer-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
130 (con.): Bedwyr-----	Severe: depth to rock, slope	Severe: shrink-swell, slope	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: excess sodium, slope, depth to rock
140: Hawsley-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty, too sandy
141: Hawsley-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty, too sandy
Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
142: Hawsley-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty, too sandy
Appian-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess sodium
Ruhe-----	Severe: depth to rock, cutbanks cave	Moderate: depth to rock, large stones	Severe: depth to rock	Moderate: slope, depth to rock, large stones	Moderate: depth to rock, large stones	Severe: droughty, depth to rock
143: Hawsley-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope, too sandy
Gamgee-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium
144: Hawsley-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope, too sandy
Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock	Severe: depth to rock, cemented pan	Severe: slope, depth to rock	Severe: depth to rock	Severe: excess sodium, large stones, depth to rock
146: Hawsley-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
146 (con.): Juva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: droughty, flooding
147: Hawsley-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty, too sandy
Celeton-----	Severe: depth to rock	Moderate: depth to rock	Severe: depth to rock	Moderate: slope, depth to rock	Moderate: depth to rock	Severe: large stones, droughty, depth to rock
Bluewing-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
150: Buckaroo-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding, slope	Moderate: slope, flooding	Severe: small stones, droughty
152: Buckaroo-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium
Watoopah-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty, too sandy
Rezave-----	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Severe: excess sodium, depth to rock
153: Buckaroo-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium, small stones
Rednik-----	Severe: cutbanks cave	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Severe: small stones, droughty
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty
154: Buckaroo-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Rednik-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones, droughty
Genegraf-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
155: Buckaroo-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Genegraf-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Pineval-----	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Moderate: small stones, droughty
158: Buckaroo-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium, small stones
Celeton-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
Wholan-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
159: Buckaroo-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium, small stones
Genegraf-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium, small stones
160: Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
161: Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Uripnes-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
162: Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock



TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
162 (con.): Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rezave-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: excess sodium, slope, depth to rock
164: Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Loomer-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
170: Isolde-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Dune Land-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: droughty, slope
Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: excess sodium, large stones, slope
171: Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: excess salt, droughty, slope
Parran-----	Moderate: too clayey, wetness	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt, too clayey
Appian-----	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Slight	Severe: excess sodium
172: Isolde-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock	Severe: depth to rock, cemented pan	Severe: slope, depth to rock	Severe: depth to rock	Severe: excess sodium, large stones, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
172 (con.): Hawsley-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope, too sandy
173: Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: excess salt, droughty, slope
174: Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: excess salt, droughty, slope
Ragtown-----	Moderate: too clayey, flooding	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: shrink-swell, low strength, flooding	Severe: excess salt, flooding
180: Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
Inmo-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: droughty
181: Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty
184: Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
Pineval-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Severe: large stones
185: Bluewing-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
Toulon-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones, droughty
Rock Outcrop.						
186: Bluewing-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: droughty

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
186 (con.): Hawsley-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty, too sandy
190: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
191: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
192: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
193: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Mirkwood-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
194: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Hooplite-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
199:						
Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Olac-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock
200:						
Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock	Severe: depth to rock, cemented pan	Severe: depth to rock	Severe: depth to rock	Severe: excess sodium, depth to rock
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, large stones, slope
Rock Outcrop.						
201:						
Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock	Severe: depth to rock, cemented pan	Severe: slope, depth to rock	Severe: depth to rock	Severe: excess sodium, depth to rock
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, large stones, slope
Celeton-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, large stones, droughty
203:						
Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock	Severe: depth to rock, cemented pan	Severe: slope, depth to rock	Severe: depth to rock	Severe: excess sodium, depth to rock
Hawsley-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty, too sandy
204:						
Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock	Severe: depth to rock, cemented pan	Severe: slope, depth to rock	Severe: depth to rock	Severe: excess sodium, depth to rock
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
204 (con.): Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
206: Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: excess sodium, slope, depth to rock
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
207: Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock	Severe: depth to rock, cemented pan	Severe: slope, depth to rock	Severe: depth to rock	Severe: excess sodium, depth to rock
Rezave-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: excess sodium, slope, depth to rock
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock
208: Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock	Severe: depth to rock, cemented pan	Severe: slope, depth to rock	Severe: depth to rock	Severe: excess sodium, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rubble Land-----	Severe: large stones, slope	Severe: slope, large stones	Severe: slope, large stones	Severe: slope, large stones	Severe: slope, large stones	Severe: small stones, large stones, droughty
210: Biddleman-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, droughty
Biddleman-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium, droughty

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
211: Biddleman-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt, excess sodium, droughty
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: droughty
Biddleman-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, droughty
213: Biddleman-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium, droughty
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
214: Biddleman-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, droughty
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
Ruhe-----	Severe: depth to rock, cutbanks cave	Moderate: depth to rock, large stones	Severe: depth to rock	Moderate: depth to rock, large stones	Moderate: depth to rock, large stones	Severe: droughty, depth to rock
215: Biddleman-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess sodium, droughty
Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
216: Biddleman-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess sodium, droughty
Bluewing-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, large stones	Moderate: small stones, droughty
220: Bango-----	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: excess sodium
Stumble-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
221: Bango-----	Moderate: too clayey	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: shrink-swell, low strength, flooding	Severe: excess sodium, small stones
Appian-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess sodium
222: Bango-----	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: excess sodium
Playas-----	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: excess salt, ponding, droughty
Chuckles-----	Moderate: too clayey	Slight	Moderate: shrink-swell	Slight	Moderate: low strength	Severe: excess salt
230: Uripnes-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Budihol-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Rock Outcrop.						
231: Uripnes-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Budihol-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Chill-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
232: Uripnes-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
240: Watoopah-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
240 (con.): Genegraf-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Buckaroo-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium
241: Watoopah-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty, too sandy
Buckaroo-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Wholan-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
250: Rezave-----	Severe: depth to rock	Severe: shrink-swell, depth to rock	Severe: depth to rock, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, low strength	Severe: excess sodium, small stones, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
260: Appian-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess sodium
Playas-----	Severe: ponding	Severe: flooding, ponding, shrink-swell	Severe: flooding, ponding, shrink-swell	Severe: flooding, ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: excess salt, ponding, droughty
261: Appian-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess sodium
262: Appian-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess sodium
Juva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: droughty, flooding
Bango-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell, low strength	Severe: excess sodium
270: Fubble-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock



TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
270 (con.): Nicanor-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
280: Troacken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: excess salt
Chuckles-----	Moderate: too clayey	Slight	Moderate: shrink-swell	Slight	Moderate: low strength	Severe: excess salt
281: Troacken-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
Ragtown-----	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength	Severe: excess salt
283: Troacken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, large stones	Moderate: small stones, droughty
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty
284: Troacken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding, slope	Moderate: slope, flooding	Severe: small stones, droughty
290: Huxley-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt, excess sodium, droughty
300: Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Colbar-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: large stones, slope
Rock Outcrop.						
301: Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Mirkwood-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

[illegible]

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
308 (con.): Colbar-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: large stones, slope
309: Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Pickup-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
Loomer-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
310: Rednik-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones, droughty
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: droughty
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
311: Rednik-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones, droughty
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: droughty
Genegraf-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
313: Rednik-----	Severe: cutbanks cave	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Severe: small stones, droughty
Ricert-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Trocken-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Moderate: small stones, large stones, droughty
315: Rednik-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
315 (con.): Genegraf-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Barnmot-----	Severe: slope	Severe: shrink-swell, slope	Severe: slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: small stones, slope, too clayey
316: Rednik-----	Severe: cutbanks cave	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Severe: small stones, droughty
Rednik-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
317: Rednik-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones, droughty
Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
320: Jung-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Rock Outcrop.						
321: Jung-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Desatoya-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Severe: small stones
Roca-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: large stones, slope
322: Jung-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
322 (con.): Puett-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Buffaran-----	Severe: cemented pan	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell, low strength	Severe: cemented pan
324: Jung-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Clan Alpine-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Colbar-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: large stones, slope
325: Jung-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Clan Alpine-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
330: Settlement-----	Severe: wetness	Severe: flooding, wetness, shrink-swell	Severe: flooding, wetness, shrink-swell	Severe: flooding, wetness, shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt, excess sodium, too clayey
Louderback-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Moderate: droughty, too sandy
Rustigate-----	Moderate: wetness	Severe: flooding	Severe: flooding	Severe: flooding	Severe: frost action	Slight
331: Settlement-----	Severe: wetness	Severe: flooding, wetness, shrink-swell	Severe: flooding, wetness, shrink-swell	Severe: flooding, wetness, shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt, excess sodium
Chuckles-----	Moderate: too clayey	Slight	Moderate: shrink-swell	Slight	Moderate: low strength	Severe: excess salt
Rustigate-----	Moderate: wetness	Severe: flooding	Severe: flooding	Severe: flooding	Severe: frost action	Slight

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
340: Slaw-----	Moderate: too clayey, flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength, flooding	Severe: excess salt
Juva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: droughty, flooding
Wholan-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: excess salt, flooding
341: Slaw-----	Moderate: too clayey, flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength, flooding	Severe: excess salt
Chuckles-----	Moderate: too clayey	Slight	Moderate: shrink-swell	Slight	Moderate: low strength	Severe: excess salt
342: Slaw-----	Moderate: too clayey, flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength, flooding	Severe: excess salt
Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
Hessing-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
343: Slaw-----	Moderate: too clayey, flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength, flooding	Severe: excess salt
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: excess salt, small stones
Chuckles-----	Moderate: too clayey	Slight	Moderate: shrink-swell	Slight	Moderate: low strength	Severe: excess salt
344: Slaw-----	Moderate: too clayey, flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength, flooding	Severe: excess salt
Ragtown-----	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength	Severe: excess salt
350: Ricert-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess sodium
Pineval-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
351: Ricert-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Chilper-----	Moderate: too clayey	Severe: shrink-swell	Slight	Severe: shrink-swell	Severe: shrink-swell, low strength	Severe: excess sodium
Pineval-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, droughty, slope
352: Ricert-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Desatoya-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Severe: small stones
Pineval-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Severe: large stones
353: Ricert-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, large stones	Moderate: small stones, droughty
Pineval-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Moderate: small stones, droughty
358: Ricert-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Desatoya-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Severe: small stones
Trocken-----	Severe: cutbanks cave	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Moderate: small stones, large stones, droughty
359: Ricert-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Celeton-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
359 (con.): Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding, slope	Moderate: slope, flooding	Severe: droughty
360: Ricert-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Trocken-----	Severe: cutbanks cave	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Moderate: small stones, large stones, droughty
Rebel-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Slight
370: Duco-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Clanalpine-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Jung-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
371: Duco-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Clanalpine-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
373: Duco-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Itca-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Puett-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
380: Itca-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock



TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
380 (con.): Clan Alpine-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock Outcrop.						
381: Itca-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Reluctan-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
Walti-----	Severe: depth to rock, slope	Severe: shrink-swell, slope	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: large stones, slope
390: Defler-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Moderate: small stones, droughty
Pineval-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty
391: Defler-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Moderate: small stones, droughty
Trocken-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: small stones, large stones, droughty
400: Chuckles-----	Moderate: too clayey	Slight	Moderate: shrink-swell	Slight	Moderate: low strength	Severe: excess salt
Playas-----	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: excess salt, ponding, droughty
401: Chuckles-----	Moderate: too clayey	Slight	Moderate: shrink-swell	Slight	Moderate: low strength	Severe: excess salt
Bango-----	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: excess sodium
402: Chuckles-----	Moderate: too clayey	Slight	Moderate: shrink-swell	Slight	Moderate: low strength	Severe: excess salt

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
402 (con.): Playas-----	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: excess salt, ponding, droughty
Slaw-----	Moderate: too clayey, flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength, flooding	Severe: excess salt
404: Chuckles-----	Moderate: too clayey	Slight	Moderate: shrink-swell	Slight	Moderate: low strength	Severe: excess salt
Settlement-----	Severe: wetness	Severe: flooding, wetness, shrink-swell	Severe: flooding, wetness, shrink-swell	Severe: flooding, wetness, shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt, excess sodium, too clayey
Rebel-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Slight
410: Buffaran-----	Severe: cemented pan	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell, low strength	Severe: cemented pan
Desatoya-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Severe: small stones
411: Buffaran-----	Severe: cemented pan	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell, low strength	Severe: cemented pan
Rebel-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Slight
Puett-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
420: Troocken-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Moderate: small stones, large stones, droughty
Hessing-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Dun Glen-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
422:						
Trocken-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: small stones, large stones, droughty
Hessing-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Pineval-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty
423:						
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: excess salt
425:						
Trocken-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: small stones, large stones, droughty
Hessing-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Defler-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Moderate: small stones, droughty
430:						
Kram-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Attella-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
432:						
Kram-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Findout-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
432 (con.): Rock Outcrop.						
433: Kram-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Hopeka-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, droughty, slope
Rock Outcrop.						
440: Ravenswood-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope
Itca-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Walti-----	Severe: depth to rock	Severe: shrink-swell	Severe: depth to rock, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength	Severe: large stones
450: Wholan-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: excess salt, flooding
Wholan-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
Defler-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Moderate: small stones, droughty
460: Juva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: droughty, flooding
Wholan-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: excess salt, flooding
Stumble-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
470: Hessing-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Wholan-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: excess salt, flooding

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
470 (con.): Dun Glen-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
471: Hessing-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Dun Glen-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
Bango-----	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: excess sodium
480: Yody-----	Severe: cemented pan, cutbanks cave	Moderate: cemented pan	Severe: cemented pan	Moderate: slope, cemented pan	Moderate: cemented pan, frost action	Moderate: small stones, cemented pan
Buffaran-----	Severe: cemented pan	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell, low strength	Severe: cemented pan
Pineval-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty
481: Yody-----	Severe: cemented pan, cutbanks cave	Moderate: cemented pan	Severe: cemented pan	Moderate: slope, cemented pan	Moderate: cemented pan, frost action	Moderate: small stones, cemented pan
Ricert-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Pineval-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty
484: Yody-----	Severe: cemented pan, cutbanks cave	Moderate: cemented pan	Severe: cemented pan	Moderate: slope, cemented pan	Moderate: cemented pan, frost action	Moderate: small stones, cemented pan
Pineval-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty
491: Pineval-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty
Rebel-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Slight
Wholan-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

[illegible]

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
530 (con.): Troocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding, slope	Moderate: slope, flooding	Severe: droughty
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty
532: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan
Ricert-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Barnmot-----	Severe: slope	Severe: shrink-swell, slope	Severe: slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: small stones, slope, too clayey
533: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan
Buffaran-----	Severe: cemented pan, slope	Severe: shrink-swell, slope, cemented pan	Severe: cemented pan, slope, shrink-swell	Severe: shrink-swell, slope, cemented pan	Severe: cemented pan, shrink-swell, low strength	Severe: slope, cemented pan
535: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan
Bundorf-----	Severe: cemented pan	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell	Severe: small stones, cemented pan
536: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: slope, cemented pan	Severe: cemented pan	Severe: cemented pan
Rednik-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
537: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan
Otomo-----	Severe: cemented pan, cutbanks cave	Severe: cemented pan	Severe: cemented pan	Severe: slope, cemented pan	Severe: cemented pan	Severe: droughty, cemented pan
538: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Severe: small stones, cemented pan

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
538 (con.): Genegraf-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium
Roic-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
540: Doughide-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, low strength, slope	Severe: small stones, slope, depth to rock
Itca-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Ravenswood-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope
551: Yerington-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
560: Izod-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, large stones, slope
Rock Outcrop.						
572: Rawe-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: small stones, droughty, slope
Malpais-----	Moderate: large stones, slope	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Moderate: small stones, large stones, droughty
580: Welch-----	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, frost action	Moderate: wetness, flooding
590: Rebel-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Slight
Pineval-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty



TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
590 (con.): Yody-----	Severe: cemented pan, cutbanks cave	Moderate: cemented pan	Severe: cemented pan	Moderate: slope, cemented pan	Moderate: cemented pan, frost action	Moderate: small stones, cemented pan
591: Rebel-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Slight
592: Rebel-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Slight
Wholan-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
Pineval-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding, frost action	Moderate: small stones, droughty
600: Hooten-----	Severe: cemented pan	Moderate: cemented pan	Severe: cemented pan	Moderate: cemented pan	Moderate: cemented pan	Severe: small stones, cemented pan
Bango-----	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: excess sodium
Isolde-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: excess salt, droughty
610: Barnmot-----	Severe: slope	Severe: shrink-swell, slope	Severe: slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: small stones, slope, too clayey
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
Badland-----	Severe: slope	Severe: shrink-swell, slope	Severe: slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: excess salt, slope
620: Findout-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Uripnes-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
620 (con.): Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
621: Findout-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Izod-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, large stones, slope
Rock Outcrop.						
622: Findout-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Rock Outcrop.						
640: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
Bango-----	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: excess sodium
643: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
Bluewing-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: small stones, droughty
644: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
Toulon-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones, droughty
Chuckles-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Severe: excess salt
645: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
650: Labou-----	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Severe: depth to rock	Severe: excess salt, excess sodium, depth to rock
Rock Outcrop.						
660: Loomer-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Duco-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
662: Loomer-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Bombadil-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
670: Celeton-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
Genegraf-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium, small stones
Bedwyr-----	Severe: depth to rock, slope	Severe: shrink-swell, slope	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: excess sodium, small stones, slope
671: Celeton-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope	Severe: small stones, droughty, depth to rock
Bedwyr-----	Severe: depth to rock	Severe: shrink-swell	Severe: depth to rock, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength	Severe: excess sodium, small stones, depth to rock
Watoopah-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty, too sandy

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
672: Celeton-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, large stones, droughty
Barnmot-----	Severe: slope	Severe: shrink-swell, slope	Severe: slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: small stones, slope, too clayey
Chilper-----	Moderate: too clayey	Severe: shrink-swell	Slight	Severe: shrink-swell	Severe: shrink-swell, low strength	Severe: excess sodium
680: Bombadil-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
691: Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock	Severe: depth to rock, cemented pan	Severe: slope, depth to rock	Severe: depth to rock	Severe: excess sodium, depth to rock
700: Clanalpine-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Itca-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
710: Luning-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: droughty
Izo-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
730: Hooplite-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
731: Hooplite-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
732: Hooplite-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Puett-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
733: Hooplite-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Jung-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

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TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
800: Bedwyr-----	Severe: depth to rock	Severe: shrink-swell	Severe: depth to rock, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength	Severe: excess sodium, depth to rock
Celeton-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
802: Bedwyr-----	Severe: depth to rock, slope	Severe: shrink-swell, slope	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: excess sodium, small stones, slope
Bedzee-----	Severe: depth to rock, slope	Severe: shrink-swell, slope	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: slope, depth to rock
Jobpeak-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
820: Aboten-----	Severe: cemented pan, cutbanks cave	Moderate: cemented pan	Severe: cemented pan	Moderate: slope, cemented pan	Moderate: cemented pan	Severe: excess sodium, small stones, cemented pan
Inmo-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding, slope	Severe: flooding	Severe: small stones, droughty
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty
830: Corral-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Celeton-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: large stones, droughty, slope
Bedwyr-----	Severe: depth to rock	Severe: shrink-swell	Severe: depth to rock, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength	Severe: excess sodium, depth to rock
840: Belate-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
Roca-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: large stones, slope



TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
840 (con.): Cleavage-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
850: Walti-----	Severe: depth to rock	Severe: shrink-swell	Severe: depth to rock, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength	Moderate: small stones, large stones, slope
Roca-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: large stones, slope
Belate-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
860: Teguro-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Colbar-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: large stones, slope
Cleavage-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
870: Chill-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, large stones, slope
Cleavage-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
880: Coppereid-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Findout-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

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TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
940: Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Rubble Land-----	Severe: large stones	Severe: large stones	Severe: large stones	Severe: large stones	Severe: large stones	Severe: small stones, large stones, droughty
960: Kolda-----	Severe: ponding	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding	Severe: ponding, frost action	Severe: ponding
Umbertland-----	Severe: wetness	Severe: flooding, shrink-swell	Severe: flooding, wetness, shrink-swell	Severe: flooding, shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt, excess sodium
970: Jobpeak-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Teguro-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Rock Outcrop.						
980: Madeline-----	Severe: depth to rock, slope	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, low strength	Severe: slope, depth to rock
Millerlux-----	Severe: depth to rock	Severe: shrink-swell, depth to rock	Severe: depth to rock, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, low strength	Severe: depth to rock
990: Millerlux-----	Severe: depth to rock	Severe: shrink-swell, depth to rock	Severe: depth to rock, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, low strength	Severe: depth to rock
Ninemile-----	Severe: depth to rock	Severe: shrink-swell, depth to rock	Severe: depth to rock, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, low strength	Severe: large stones, depth to rock
Madeline-----	Severe: depth to rock, slope	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, low strength	Severe: slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1000: Stumble-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
1010: Downeyville----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Stewval-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Blacktop-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, droughty, slope
1011: Downeyville----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Blacktop-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, droughty, slope
1012: Downeyville----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, large stones, slope
Downeyville----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, large stones, slope
Blacktop-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, droughty, slope
1013: Downeyville----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Downeyville----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Gabbvally-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1020: Unsel-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: small stones
Annaw-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: droughty
Izo-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty
1023: Unsel-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: small stones, droughty
Pineval-----	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Moderate: small stones, droughty
1024: Unsel-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: small stones
Desatoya-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Severe: small stones
Roic-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
1025: Unsel-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
Desatoya-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Severe: small stones
Pineval-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty
1026: Unsel-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: small stones
Pineval-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty
Defler-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Moderate: small stones, droughty
1027: Unsel-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: small stones

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1027 (con.): Roic-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope	Severe: small stones, depth to rock
Annaw-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
1030: Goldyke-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Blacktop-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, droughty, slope
Koyen-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Slight
1040: Terlco-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: excess sodium, small stones
Annaw-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
Izo-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty
1050: Ceejay-----	Severe: depth to rock, slope	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, slope	Severe: slope, depth to rock
Olac-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Rock Outcrop.						
1061: Olac-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, cemented pan, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: excess sodium, slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1062: Olac-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock
Ceejay-----	Severe: depth to rock, slope	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, slope	Severe: slope, depth to rock
1071: Ganaflan-----	Severe: cutbanks cave	Slight	Moderate: depth to rock	Slight	Slight	Severe: excess salt
Bluewing-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: small stones, droughty
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
1090: Umberland-----	Moderate: too clayey, wetness	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt, excess sodium
Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: excess salt, droughty, slope
1100: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Olac-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
1101: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1102: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
1104: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Roic-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Singats-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
1120: Patna-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy
Hawsley-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy
Juva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: small stones, droughty, flooding
1121: Patna-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy
1130: Malpais-----	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Moderate: small stones, large stones, droughty
Malpais-----	Moderate: large stones, slope	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Moderate: small stones, large stones, droughty
1140: Roic-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope	Severe: depth to rock



TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1140 (con.): Biddleman-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, droughty
Hooten-----	Severe: cemented pan	Moderate: cemented pan	Severe: cemented pan	Moderate: cemented pan	Moderate: cemented pan	Severe: small stones, cemented pan
1142: Roic-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope	Severe: depth to rock
Mazuma-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Slight
Celeton-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope	Severe: large stones, droughty, depth to rock
1143: Roic-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope	Severe: depth to rock
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: droughty
Celeton-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope	Severe: large stones, droughty, depth to rock
1144: Roic-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Celeton-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: large stones, droughty, slope
1145: Roic-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Patna-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1150: Phing-----	Moderate: too clayey, slope	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength	Severe: large stones
Buffaran-----	Severe: cemented pan	Severe: shrink-swell, cemented pan	Severe: cemented pan, shrink-swell	Severe: shrink-swell, slope, cemented pan	Severe: cemented pan, shrink-swell, low strength	Severe: cemented pan
1160: Sojur-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
1171: Tocan-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
Aboten-----	Severe: cemented pan, cutbanks cave	Moderate: cemented pan	Severe: cemented pan	Moderate: cemented pan	Moderate: cemented pan	Severe: excess sodium, small stones, cemented pan
1180: Jerval-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
1200: Arclay-----	Severe: depth to rock	Moderate: shrink-swell, slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, shrink-swell, slope	Severe: small stones, depth to rock
1210: Biga-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Granshaw-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
Labkey-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
1211: Biga-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
1212: Biga-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1212 (con.): Roic-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Labkey-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
1220: Labkey-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
1230: Genegraf-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Bluewing-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
1231: Genegraf-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Trocken-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty
1232: Genegraf-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Rednik-----	Severe: cutbanks cave	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Severe: small stones, droughty
Trocken-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
1233: Genegraf-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Buckaroo-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1280: Soar-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Soar-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope, frost action	Severe: small stones, depth to rock
1290: Slocave-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Vium-----	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: droughty, depth to rock
1300: Lovelock-----	Moderate: too clayey	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: shrink-swell, low strength	Slight
1301: Lovelock-----	Severe: ponding	Severe: flooding, ponding, shrink-swell	Severe: flooding, ponding, shrink-swell	Severe: flooding, ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: excess salt, ponding
1320: Gardella-----	Severe: cemented pan	Severe: shrink-swell	Severe: cemented pan, shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength	Severe: excess salt, cemented pan
1330: Parran-----	Moderate: too clayey, wetness	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt, too clayey
1331: Parran-----	Moderate: too clayey, wetness	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt, too clayey
Hawsley-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1332: Parran-----	Moderate: too clayey, wetness	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt
Umberland-----	Severe: wetness	Severe: flooding, shrink-swell	Severe: flooding, wetness, shrink-swell	Severe: flooding, shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt, excess sodium
1340: Inmo-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: small stones, droughty
Inmo-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty



TABLE 9.--SANITARY FACILITIES

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
100: Budihol-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Chill-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
102: Budihol-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Minneha-----	Severe: depth to rock, slope	Severe: seepage, depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
110: Bimmer-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Chill-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
120: Nemico-----	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Mirkwood-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
130: Bedzee-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, hard to pack, small stones
Loomer-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
130 (con.): Bedwyr-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, hard to pack, slope
140: Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
141: Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
Isolde-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy
142: Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
Appian-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
Ruhe-----	Severe: depth to rock, poor filter	Severe: seepage, depth to rock	Severe: depth to rock, too sandy, large stones	Slight	Poor: depth to rock, seepage, too sandy
143: Hawsley-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy
Gamgee-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: small stones, slope
144: Hawsley-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy
Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, large stones	Moderate: slope	Poor: depth to rock, small stones
146: Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy



TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
146 (con.): Juva-----	Severe: flooding	Severe: flooding	Severe: flooding, too sandy	Severe: flooding	Poor: too sandy
147: Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
Celeton-----	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
150: Buckaroo-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
Bluewing-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: flooding, slope	Poor: seepage, too sandy, small stones
152: Buckaroo-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
Watoopah-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Rezave-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, small stones
153: Buckaroo-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
Rednik-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy, small stones
Bluewing-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
154: Buckaroo-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
Rednik-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
154 (con.): Genegraf-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: small stones
155: Buckaroo-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
Genegraf-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
158: Buckaroo-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
Celeton-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Wholan-----	Moderate: flooding, percs slowly	Severe: seepage	Moderate: flooding	Moderate: flooding	Fair: thin layer
159: Buckaroo-----	Severe: percs slowly	Severe: slope	Severe: excess salt	Moderate: slope	Poor: small stones
Genegraf-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
160: Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
161: Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Uripnes-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
162: Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
162 (con.): Rezave-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
164: Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Loomer-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
170: Isolde-----	Severe: poor filter, slope	Severe: seepage, slope	Severe: slope, too sandy	Severe: slope	Poor: seepage, too sandy, slope
Dune Land-----	Severe: poor filter, slope	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, too sandy, slope
Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
171: Isolde-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy
Parran-----	Severe: wetness, percs slowly	Slight	Severe: wetness, excess salt	Severe: wetness	Poor: hard to pack
Appian-----	Severe: percs slowly, poor filter	Severe: seepage	Severe: wetness, too sandy	Slight	Poor: seepage, too sandy
172: Isolde-----	Severe: poor filter, slope	Severe: seepage, slope	Severe: slope, too sandy	Severe: slope	Poor: seepage, too sandy, slope
Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, large stones	Moderate: slope	Poor: depth to rock, small stones
Hawsley-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
173: Isolde-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy
174: Isolde-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy
Ragtown-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Poor: hard to pack
180: Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
Inmo-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
181: Bluewing-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
184: Bluewing-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
Pineval-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
185: Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Toulon-----	Severe: poor filter	Severe: seepage	Severe: too sandy, large stones	Slight	Poor: seepage, too sandy, small stones
Rock Outcrop.					

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
186: Bluewing-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy, small stones
Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
190: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
191: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
192: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
193: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Mirkwood-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
194: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Hooplite-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
194 (con.): Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
199: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Olac-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
200: Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock, cemented pan, large stones	Severe: depth to rock, large stones	Slight	Poor: depth to rock, small stones
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, depth to rock, cemented pan	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, seepage, small stones
Rock Outcrop.					
201: Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, large stones	Moderate: slope	Poor: depth to rock, small stones
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, depth to rock, cemented pan	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, seepage, small stones
Celeton-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
203: Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, large stones	Moderate: slope	Poor: depth to rock, small stones
Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
204: Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, large stones	Moderate: slope	Poor: depth to rock, small stones
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, depth to rock, cemented pan	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, seepage, small stones
Isolde-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy
206: Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, depth to rock, cemented pan	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, seepage, small stones
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
207: Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, large stones	Moderate: slope	Poor: depth to rock, small stones
Rezave-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, depth to rock, cemented pan	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, seepage, small stones
208: Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, large stones	Moderate: slope	Poor: depth to rock, small stones
Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rubble Land----	Severe: poor filter, slope, large stones	Severe: seepage, slope, large stones	Severe: depth to rock, seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
210: Biddleman-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Biddleman-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy, small stones
211: Biddleman-----	Severe: poor filter	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: seepage, too sandy, small stones
Trocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones
Biddleman-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
213: Biddleman-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy, small stones
Trocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones
214: Biddleman-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Trocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones
Ruhe-----	Severe: depth to rock, poor filter	Severe: seepage, depth to rock	Severe: depth to rock, too sandy, large stones	Slight	Poor: depth to rock, seepage, too sandy
215: Biddleman-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Isolde-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy



TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
216: Biddleman-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Trocken-----	Moderate: flooding, percs slowly, large stones	Moderate: seepage, slope, large stones	Severe: large stones	Moderate: flooding	Poor: small stones
220: Bango-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy
Stumble-----	Severe: poor filter	Severe: seepage	Moderate: too sandy	Slight	Poor: small stones
221: Bango-----	Severe: percs slowly	Moderate: slope	Moderate: flooding	Moderate: flooding	Good
Appian-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
222: Bango-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy
Playas-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey, excess salt	Severe: ponding	Poor: too clayey, hard to pack, ponding
Chuckles-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
230: Uripnes-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Budihol-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
231: Uripnes-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Budihol-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
231 (con.): Chill-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
232: Uripnes-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
240: Watoopah-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Genegraf-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: small stones
Buckaroo-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
241: Watoopah-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Buckaroo-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
Wholan-----	Moderate: flooding, percs slowly	Severe: seepage	Moderate: flooding	Moderate: flooding	Fair: thin layer
250: Rezave-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
260: Appian-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
Playas-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey, excess salt	Severe: ponding	Poor: too clayey, hard to pack, ponding
261: Appian-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
262: Appian-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
Juva-----	Severe: flooding	Severe: flooding	Severe: flooding, too sandy	Severe: flooding	Poor: too sandy
Bango-----	Severe: percs slowly	Slight	Slight	Slight	Good
270: Fubble-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Nicanor-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
280: Trocken-----	Severe: flooding	Severe: seepage, flooding	Severe: flooding, too sandy, excess salt	Severe: flooding	Poor: too sandy, small stones
Chuckles-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
281: Trocken-----	Moderate: percs slowly	Moderate: seepage	Moderate: too sandy	Slight	Poor: small stones
Ragtown-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Poor: hard to pack
283: Trocken-----	Moderate: flooding, percs slowly, large stones	Moderate: seepage, slope, large stones	Severe: large stones	Moderate: flooding	Poor: small stones
Bluewing-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
284: Trocken-----	Moderate: flooding, percs slowly, slope	Severe: slope	Moderate: flooding, slope, too sandy	Moderate: flooding, slope	Poor: small stones
290: Huxley-----	Severe: poor filter	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
300: Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Colbar-----	Severe: depth to rock, slope	Severe: seepage, depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, large stones, slope
Rock Outcrop.					
301: Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Mirkwood-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Nemico-----	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
302: Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
304: Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
Bombadil-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Loomer-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
305: Old Camp-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
305 (con.): Colbar-----	Severe: depth to rock, slope	Severe: seepage, depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, large stones, slope
Rock Outcrop.					
307: Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
308: Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Clan Alpine-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Colbar-----	Severe: depth to rock, slope	Severe: seepage, depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, large stones, slope
309: Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Pickup-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Loomer-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
310: Rednik-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Trocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
310 (con.): Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
311: Rednik-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Trocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones
Genegraf-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
313: Rednik-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy, small stones
Ricert-----	Moderate: percs slowly	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
Trocken-----	Moderate: percs slowly, large stones	Severe: large stones	Severe: large stones	Slight	Poor: small stones
315: Rednik-----	Severe: poor filter, slope	Severe: seepage, slope	Severe: slope, too sandy	Severe: slope	Poor: seepage, too sandy, small stones
Genegraf-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
Barnmot-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: hard to pack, slope
316: Rednik-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy, small stones
Rednik-----	Severe: poor filter, slope	Severe: seepage, slope	Severe: slope, too sandy	Severe: slope	Poor: seepage, too sandy, small stones
317: Rednik-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
317 (con.): Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
Trocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones
320: Jung-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
321: Jung-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Desatoya-----	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too sandy, large stones	Slight	Poor: small stones
Roca-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
322: Jung-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Puett-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Buffaran-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, hard to pack
324: Jung-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Clanalpine-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
324 (con.): Colbar-----	Severe: depth to rock, slope	Severe: seepage, depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, large stones, slope
325: Jung-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Clan Alpine-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
330: Settlement-----	Severe: wetness, percs slowly	Slight	Severe: wetness, too clayey, excess sodium	Severe: wetness	Poor: too clayey, hard to pack, wetness
Louderback-----	Severe: wetness, poor filter	Severe: seepage, wetness	Severe: wetness, too sandy	Severe: seepage, wetness	Poor: too sandy
Rustigate-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: wetness
331: Settlement-----	Severe: wetness, percs slowly	Slight	Severe: wetness, too clayey, excess sodium	Severe: wetness	Poor: too clayey, hard to pack, wetness
Chuckles-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
Rustigate-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: wetness
340: Slaw-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Good
Juva-----	Severe: flooding	Severe: flooding	Severe: flooding, too sandy	Severe: flooding	Poor: too sandy
Wholan-----	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good



TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
341:					
Slaw-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Good
Chuckles-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
342:					
Slaw-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Good
Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
Hessing-----	Severe: poor filter	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: seepage, too sandy, small stones
343:					
Slaw-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Good
Trocken-----	Severe: flooding	Severe: seepage, flooding	Severe: flooding, too sandy, excess salt	Severe: flooding	Poor: too sandy, small stones
Chuckles-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
344:					
Slaw-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Good
Ragtown-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Poor: hard to pack
350:					
Ricert-----	Moderate: percs slowly	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
351:					
Ricert-----	Moderate: percs slowly	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
Chilper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
351 (con.): Pineval-----	Moderate: percs slowly, slope	Severe: slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy, small stones
352: Ricert-----	Slight	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
Desatoya-----	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too sandy, large stones	Moderate: slope	Poor: small stones
Pineval-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
353: Ricert-----	Moderate: percs slowly	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
Trocken-----	Moderate: flooding, percs slowly, large stones	Moderate: seepage, slope, large stones	Severe: large stones	Moderate: flooding	Poor: small stones
Pineval-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
358: Ricert-----	Moderate: percs slowly	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
Desatoya-----	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too sandy, large stones	Moderate: slope	Poor: small stones
Trocken-----	Moderate: percs slowly, slope, large stones	Severe: slope, large stones	Severe: large stones	Moderate: slope	Poor: small stones
359: Ricert-----	Slight	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
Celeton-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
359 (con.): Trocken-----	Moderate: flooding, percs slowly, slope	Severe: slope	Moderate: flooding, slope, too sandy	Moderate: flooding, slope	Poor: small stones
360: Ricert-----	Moderate: percs slowly	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
Trocken-----	Moderate: percs slowly, slope, large stones	Severe: slope, large stones	Severe: large stones	Moderate: slope	Poor: small stones
Rebel-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
370: Duco-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Clanalpine-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Jung-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
371: Duco-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Clanalpine-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
373: Duco-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Itca-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
373 (con.): Puett-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
380: Itca-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
Clan Alpine-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
381: Itca-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
Reluctan-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Walti-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, hard to pack, slope
390: Defler-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Poor: small stones
Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
391: Defler-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Poor: small stones
Trocken-----	Moderate: percs slowly, large stones	Severe: large stones	Severe: large stones	Slight	Poor: small stones
400: Chuckles-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
Playas-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey, excess salt	Severe: ponding	Poor: too clayey, hard to pack, ponding

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
401: Chuckles-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
Bango-----	Severe: percs slowly	Slight	Moderate: too sandy	Slight	Fair: too sandy
402: Chuckles-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
Playas-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey, excess salt	Severe: ponding	Poor: too clayey, hard to pack, ponding
Slaw-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Good
404: Chuckles-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
Settlement-----	Severe: wetness, percs slowly	Slight	Severe: wetness, too clayey, excess sodium	Severe: wetness	Poor: too clayey, hard to pack, wetness
Rebel-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
410: Buffaran-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, hard to pack
Desatoya-----	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too sandy, large stones	Moderate: slope	Poor: small stones
411: Buffaran-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, hard to pack
Rebel-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
Puett-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
420: Troocken-----	Moderate: percs slowly, large stones	Severe: large stones	Severe: large stones	Slight	Poor: small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
420 (con.): Hessing-----	Severe: poor filter	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: seepage, too sandy, small stones
Dun Glen-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding	Moderate: flooding	Good
422: Troocken-----	Moderate: percs slowly, large stones	Severe: large stones	Severe: large stones	Slight	Poor: small stones
Hessing-----	Severe: poor filter	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: seepage, too sandy, small stones
Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
423: Troocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
Trocken-----	Severe: flooding	Severe: seepage, flooding	Severe: flooding, too sandy, excess salt	Severe: flooding	Poor: too sandy, small stones
425: Troocken-----	Moderate: percs slowly, large stones	Severe: large stones	Severe: large stones	Slight	Poor: small stones
Hessing-----	Severe: poor filter	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: seepage, too sandy, small stones
Defler-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Poor: small stones
430: Kram-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Attella-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
430 (con.): Rock Outcrop.					
432: Kram-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Findout-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
433: Kram-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Hopeka-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
440: Ravenswood-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
Itca-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
Walti-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
450: Wholan-----	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good
Wholan-----	Moderate: flooding, percs slowly	Severe: seepage	Moderate: flooding	Moderate: flooding	Fair: thin layer
Defler-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Poor: small stones
460: Juva-----	Severe: flooding	Severe: flooding	Severe: flooding, too sandy	Severe: flooding	Poor: too sandy
Wholan-----	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
460 (con.): Stumble-----	Severe: poor filter	Severe: seepage	Moderate: too sandy	Slight	Poor: small stones
470: Hessing-----	Severe: poor filter	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: seepage, too sandy, small stones
Wholan-----	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good
Dun Glen-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding	Moderate: flooding	Good
471: Hessing-----	Severe: poor filter	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: seepage, too sandy, small stones
Dun Glen-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding	Moderate: flooding	Good
Bango-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy
480: Yody-----	Severe: cemented pan	Severe: seepage, cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
Buffaran-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, hard to pack
Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
481: Yody-----	Severe: cemented pan	Severe: seepage, cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
Ricert-----	Moderate: percs slowly	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
484: Yody-----	Severe: cemented pan	Severe: seepage, cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones



TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
484 (con.): Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
491: Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Rebel-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
Wholan-----	Moderate: flooding, percs slowly	Severe: seepage	Moderate: flooding	Moderate: flooding	Fair: thin layer
492: Pineval-----	Moderate: percs slowly, slope	Severe: slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy, small stones
Rebel-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
494: Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Buckaroo-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: small stones
Rebel-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
500: Louderback-----	Severe: wetness, poor filter	Severe: seepage, wetness	Severe: wetness, too sandy	Severe: seepage, wetness	Poor: too sandy
Rustigate-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: wetness
Isolde-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
511: Grumblen-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Pickup-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
520: Pineval-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
Bluewing-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
Inmo-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
530: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
Trocken-----	Moderate: flooding, percs slowly, slope	Severe: slope	Moderate: flooding, slope, too sandy	Moderate: flooding, slope	Poor: small stones
Bluewing-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
532: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
Ricert-----	Moderate: percs slowly	Severe: seepage	Moderate: too sandy	Slight	Poor: seepage, small stones
Barnmot-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: hard to pack, slope
533: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
Buffaran-----	Severe: cemented pan, slope	Severe: cemented pan, slope	Severe: cemented pan, slope	Severe: slope	Poor: cemented pan, hard to pack, slope
535: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
Bundorf-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
536: Cleaver-----	Severe: cemented pan	Severe: cemented pan, slope	Severe: cemented pan	Moderate: slope	Poor: cemented pan, small stones
Rednik-----	Severe: poor filter, slope	Severe: seepage, slope	Severe: slope, too sandy	Severe: slope	Poor: seepage, too sandy, small stones
537: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
Otomo-----	Severe: cemented pan, poor filter	Severe: seepage, cemented pan, slope	Severe: cemented pan	Moderate: slope	Poor: cemented pan, seepage, small stones
538: Cleaver-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
Genegraf-----	Severe: percs slowly	Severe: slope	Severe: excess salt	Moderate: slope	Poor: small stones
Roic-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
540: Doughhide-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
Itca-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
Ravenswood-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
551: Yerington-----	Severe: poor filter	Severe: seepage	Moderate: too sandy	Slight	Fair: too sandy, small stones
560: Izod-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
572: Rawe-----	Moderate: slope	Severe: seepage, slope	Moderate: slope	Moderate: slope	Poor: seepage, small stones
Malpais-----	Moderate: slope, large stones	Severe: seepage, slope	Severe: large stones	Moderate: slope	Poor: small stones
580: Welch-----	Severe: flooding, wetness, percs slowly	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness
590: Rebel-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Yody-----	Severe: cemented pan	Severe: seepage, cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
591: Rebel-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
592: Rebel-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
Wholan-----	Moderate: flooding, percs slowly	Severe: seepage	Moderate: flooding	Moderate: flooding	Fair: thin layer
Pineval-----	Moderate: flooding, percs slowly	Moderate: seepage	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
600: Hooten-----	Severe: cemented pan	Severe: seepage, cemented pan	Severe: excess salt	Slight	Poor: cemented pan
Bango-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy
Isolde-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
610: Barnmot-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: hard to pack, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
610 (con.): Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
Badland-----	Severe: percs slowly, slope	Severe: slope	Severe: slope, too clayey, excess salt	Severe: slope	Poor: too clayey, hard to pack, slope
620: Findout-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Uripnes-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
621: Findout-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Izod-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
622: Findout-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
640: Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
Bango-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
643: Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
644: Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
Toulon-----	Severe: poor filter	Severe: seepage	Severe: too sandy, large stones	Slight	Poor: seepage, too sandy, small stones
Chuckles -----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
645: Mazuma-----	Slight	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
650: Labou-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock, excess salt	Moderate: slope	Poor: depth to rock, small stones
Rock Outcrop.					
660: Loomer-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
Duco-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
662: Loomer-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
Bombadil-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
670:					
Celeton-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Genegraf-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
Bedwyr-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, hard to pack, slope
671:					
Celeton-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Bedwyr-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
Watoopah-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
672:					
Celeton-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Barnmot-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: hard to pack, slope
Chilper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage, small stones
680:					
Bombadil-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
691:					
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, depth to rock, cemented pan	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, seepage, small stones
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
691 (con.): Pirouette-----	Severe: depth to rock, cemented pan	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, large stones	Moderate: slope	Poor: depth to rock, small stones
700: Clan Alpine-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Itca-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, small stones
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
710: Luning-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Moderate: flooding	Poor: too sandy
Izo-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
730: Hooplite-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
731: Hooplite-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope



TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
732:					
Hooplite-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
Puett-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
733:					
Hooplite-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
Jung-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
734:					
Hooplite-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Puett-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
735:					
Hooplite-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Duco-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
740: Packer-----	Severe: slope	Severe: seepage, slope	Severe: seepage, slope, large stones	Severe: seepage, slope	Poor: small stones, slope
Layview-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock, small stones
Hapgood-----	Severe: slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Poor: small stones, slope
741: Packer-----	Moderate: slope, large stones	Severe: seepage, slope, large stones	Severe: seepage, large stones	Severe: seepage	Poor: small stones
Hapgood-----	Moderate: depth to rock, percs slowly, slope	Severe: slope	Severe: depth to rock	Moderate: depth to rock, slope	Poor: small stones
Rock Outcrop.					
760: Burnborough-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
Cleavage-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Welch-----	Severe: flooding, wetness, percs slowly	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness
761: Burnborough-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
Cleavage-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock, small stones
Reluctan-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
770: Chilper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
770 (con.): Bundorf-----	Severe: cemented pan	Severe: cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
Trocken-----	Moderate: percs slowly, large stones	Severe: large stones	Severe: large stones	Slight	Poor: small stones
772: Chilper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage, small stones
Trocken-----	Moderate: percs slowly, large stones	Severe: large stones	Severe: large stones	Slight	Poor: small stones
Jerval-----	Slight	Severe: seepage	Slight	Slight	Poor: small stones
790: Jacratz-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Nayfan-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
800: Bedwyr-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
Celeton-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
802: Bedwyr-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, hard to pack, slope
Bedzee-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, hard to pack, small stones
Jobpeak-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
820: Aboten-----	Severe: cemented pan, poor filter	Severe: seepage, cemented pan	Moderate: cemented pan, too sandy	Slight	Poor: cemented pan, seepage, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
820 (con.): Inmo-----	Severe: flooding, poor filter	Severe: seepage, flooding, slope	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
Bluewing-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
830: Corral-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Celeton-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Bedwyr-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
840: Belate-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
Roca-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Cleavage-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
850: Walti-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
Roca-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Belate-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
860: Teguro-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
860 (con.): Colbar-----	Severe: depth to rock, slope	Severe: seepage, depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, large stones, slope
Cleavage-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
870: Chill-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Cleavage-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
880: Coppereid-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Findout-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
900: Playas-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey, excess salt	Severe: ponding	Poor: too clayey, hard to pack, ponding
901: Dune Land-----	Severe: poor filter, slope	Severe: seepage, slope	Severe: seepage, slope, too sandy	Severe: seepage, slope	Poor: seepage, too sandy, slope
Isolde-----	Severe: poor filter, slope	Severe: seepage, slope	Severe: slope, too sandy	Severe: slope	Poor: seepage, too sandy, slope
902: Badland-----	Severe: percs slowly, slope	Severe: slope	Severe: slope, too clayey, excess salt	Severe: slope	Poor: too clayey, hard to pack, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
903: Badland-----	Severe: percs slowly, slope	Severe: slope	Severe: slope, too clayey, excess salt	Severe: slope	Poor: too clayey, hard to pack, slope
Rebel-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
Yody-----	Severe: cemented pan	Severe: seepage, cemented pan	Severe: cemented pan	Slight	Poor: cemented pan, small stones
910: Theriot-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Findout-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
930: Layview-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Packer-----	Severe: slope	Severe: seepage, slope, large stones	Severe: depth to rock, seepage, slope	Severe: seepage, slope	Poor: small stones, slope
Hapgood-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
940: Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rubble Land----	Severe: poor filter, large stones	Severe: seepage, slope, large stones	Severe: depth to rock, seepage, large stones	Severe: seepage	Poor: seepage, small stones
960: Kolda-----	Severe: ponding, percs slowly	Severe: seepage, ponding	Severe: ponding, too clayey	Severe: seepage, ponding	Poor: too clayey, ponding

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
960 (con.): Umberland-----	Severe: wetness, percs slowly	Slight	Severe: wetness, too clayey, excess sodium	Severe: wetness	Poor: too clayey, hard to pack, excess salt
970: Jobpeak-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Teguro-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
980: Madeline-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
Millerlux-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
990: Millerlux-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, hard to pack
Ninemile-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock, too clayey	Severe: depth to rock	Poor: depth to rock, too clayey, hard to pack
Madeline-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
1000: Stumble-----	Severe: poor filter	Severe: seepage	Moderate: too sandy	Slight	Poor: small stones
1010: Downeyville-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Stewval-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Blacktop-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1011: Downeyville-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Blacktop-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
1012: Downeyville-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Downeyville-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Blacktop-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
1013: Downeyville-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Downeyville-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Gabbvally-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
1020: Unsel-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Annaw-----	Severe: poor filter	Severe: seepage	Moderate: flooding, too sandy, large stones	Moderate: flooding	Poor: seepage, small stones
Izo-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
1023: Unsel-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones



TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1024:					
Unsel-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy, small stones
Desatoya-----	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too sandy, large stones	Moderate: slope	Poor: small stones
Roic-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
1025:					
Unsel-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Desatoya-----	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too sandy, large stones	Moderate: slope	Poor: small stones
Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
1026:					
Unsel-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Pineval-----	Moderate: percs slowly	Moderate: seepage, slope	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Defler-----	Moderate: flooding	Severe: seepage	Moderate: flooding	Moderate: flooding	Poor: small stones
1027:					
Unsel-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Roic-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Annaw-----	Severe: poor filter	Severe: seepage	Moderate: flooding, too sandy, large stones	Moderate: flooding	Poor: seepage, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1030: Goldyke-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Blacktop-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Koyen-----	Severe: poor filter	Severe: seepage	Moderate: too sandy	Slight	Poor: thin layer
1040: Terlco-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Annaw-----	Severe: poor filter	Severe: seepage	Moderate: flooding, too sandy, large stones	Moderate: flooding	Poor: seepage, small stones
Izo-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
1050: Ceejay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Olac-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
1061: Olac-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, cemented pan, slope	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
1062: Olac-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1062 (con.): Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Ceejay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
1071: Ganaflan-----	Severe: depth to rock, poor filter	Severe: seepage, depth to rock	Severe: depth to rock, too sandy	Slight	Poor: depth to rock, seepage, too sandy
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Trocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones
1090: Umberland-----	Severe: wetness, percs slowly	Slight	Severe: wetness, too clayey, excess sodium	Severe: wetness	Poor: too clayey, hard to pack, excess sodium
Isolde-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy
1100: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Olac-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
1101: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1102: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
1104: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Roic-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
1120: Patna-----	Severe: poor filter	Severe: seepage	Slight	Slight	Poor: thin layer
Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
Juva-----	Severe: flooding	Severe: flooding	Severe: flooding, too sandy	Severe: flooding	Poor: too sandy
1121: Patna-----	Severe: poor filter	Severe: seepage	Slight	Slight	Poor: thin layer
1130: Malpais-----	Moderate: large stones	Severe: seepage	Severe: large stones	Slight	Poor: small stones
Malpais-----	Moderate: slope, large stones	Severe: seepage, slope, large stones	Severe: large stones	Moderate: slope	Poor: small stones
1140: Roic-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Biddleman-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1140 (con.): Hooten-----	Severe: cemented pan	Severe: seepage, cemented pan	Severe: excess salt	Slight	Poor: cemented pan
1142: Roic-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Mazuma-----	Slight	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Celeton-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
1143: Roic-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
Trocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones
Celeton-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
1144: Roic-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Celeton-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, hard to pack, slope
1145: Roic-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Patna-----	Severe: poor filter	Severe: seepage	Slight	Slight	Poor: thin layer
1150: Phing-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: hard to pack
Buffaran-----	Severe: cemented pan	Severe: cemented pan, slope	Severe: cemented pan	Moderate: slope	Poor: cemented pan, hard to pack

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1160: Sojur-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
1171: Tocan-----	Slight	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
Aboten-----	Severe: cemented pan, poor filter	Severe: seepage, cemented pan	Moderate: cemented pan, too sandy	Slight	Poor: cemented pan, seepage, small stones
1180: Jerval-----	Slight	Severe: seepage	Slight	Slight	Poor: small stones
Trocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones
1200: Arclay-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
1210: Biga-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy, small stones
Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
1211: Biga-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy, small stones
1212: Biga-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy, small stones
Roic-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1212 (con.): Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
1220: Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
1230: Genegraf-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy, small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage, small stones
1231: Genegraf-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
Trocken-----	Moderate: percs slowly, large stones	Severe: large stones	Severe: large stones	Slight	Poor: small stones
Bluewing-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones
1232: Genegraf-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: small stones
Rednik-----	Severe: poor filter	Severe: seepage, slope	Severe: too sandy	Moderate: slope	Poor: seepage, too sandy, small stones
Trocken-----	Moderate: flooding, percs slowly	Moderate: seepage, slope	Moderate: flooding, too sandy	Moderate: flooding	Poor: small stones
1233: Genegraf-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: small stones
Buckaroo-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
Bluewing-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones

TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1280:					
Soar-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Arclay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Soar-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
1290:					
Slocave-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Vium-----	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
1300:					
Lovelock-----	Moderate: flooding, percs slowly	Moderate: seepage, excess humus	Severe: too clayey	Moderate: flooding	Poor: too clayey, hard to pack
1301:					
Lovelock-----	Severe: ponding	Severe: ponding	Severe: ponding, too clayey, excess salt	Severe: ponding	Poor: too clayey, hard to pack, ponding
1320:					
Gardella-----	Severe: cemented pan, percs slowly	Severe: cemented pan	Severe: excess salt	Slight	Poor: cemented pan, hard to pack
1330:					
Parran-----	Severe: wetness, percs slowly	Slight	Severe: wetness, excess salt	Severe: wetness	Poor: hard to pack
1331:					
Parran-----	Severe: wetness, percs slowly	Slight	Severe: wetness, excess salt	Severe: wetness	Poor: hard to pack
Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage, too sandy
1332:					
Parran-----	Severe: wetness, percs slowly	Slight	Severe: wetness, excess salt	Severe: wetness	Poor: hard to pack
Umberland-----	Severe: wetness, percs slowly	Slight	Severe: wetness, too clayey, excess sodium	Severe: wetness	Poor: too clayey, hard to pack, excess salt



TABLE 9.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1340: Inmo-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Moderate: flooding	Poor: seepage, too sandy, small stones
Inmo-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage, too sandy, small stones



TABLE 10--CONSTRUCTION MATERIALS

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
100: Budihol-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Chill-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
102: Budihol-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Minneha-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
110: Bimmer-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Chill-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
120: Nemico-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, too clayey
Mirkwood-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
130: Bedzee-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
130 (con.): Loomer-----	Poor: depth to rock	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
Bedwyr-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, excess sodium
140: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
141: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
142: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Appian-----	Good	Probable	Improbable: too sandy	Poor: too sandy, excess sodium
Ruhe-----	Poor: depth to rock	Probable	Probable	Poor: depth to rock, too sandy, small stones
143: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Gangee-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
144: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
146: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
146 (con.): Juva-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, small stones
147: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
150: Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
152: Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Watoopah-----	Good	Probable	Probable	Poor: small stones, area reclaim
Rezave-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
153: Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Rednik-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
154: Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Rednik-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
155: Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
158: Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Wholan-----	Good	Probable	Probable	Poor: area reclaim, excess salt
159: Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
160: Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
160 (con.): Rock Outcrop.				
161: Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Uripnes-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
162: Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Theon-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rezave-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
164: Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Loomer-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
170: Isolde-----	Fair: slope	Probable	Improbable: too sandy	Poor: too sandy, slope
Dune Land-----	Fair: slope	Probable	Improbable: too sandy	Poor: too sandy, slope
Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
171: Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
171 (con.): Parran-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
Appian-----	Fair: thin layer	Improbable: thin layer	Improbable: too sandy	Poor: too sandy, excess sodium
172: Isolde-----	Fair: slope	Probable	Improbable: too sandy	Poor: too sandy, slope
Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
173: Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
174: Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Ragtown-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
180: Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Inmo-----	Good	Improbable: thin layer	Improbable: too sandy	Poor: too sandy, small stones, area reclaim
181: Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
184: Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim



TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
184 (con.): Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
185: Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Toulon-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Rock Outcrop.				
186: Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Hawley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
190: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
191: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
192: Theon-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
193: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
193 (con.): Mirkwood-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
194: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Hooplite-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
199: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Olac-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
200: Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
Osobb-----	Poor: depth to rock	Improbable: thin layer	Improbable: thin layer	Poor: depth to rock, cemented pan, small stones
Rock Outcrop.				
201: Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
Osobb-----	Poor: depth to rock, slope	Improbable: thin layer	Improbable: thin layer	Poor: depth to rock, cemented pan, small stones

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
201 (con.): Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
203: Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
204: Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
Osobb-----	Poor: depth to rock, slope	Improbable: thin layer	Improbable: thin layer	Poor: depth to rock, cemented pan, small stones
Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
206: Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
Osobb-----	Poor: depth to rock, slope	Improbable: thin layer	Improbable: thin layer	Poor: depth to rock, cemented pan, small stones
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
207: Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
Rezave-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Osobb-----	Poor: depth to rock, slope	Improbable: thin layer	Improbable: thin layer	Poor: depth to rock, cemented pan, small stones

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
208: Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rubble Land-----	Poor: large stones, slope	Improbable: small stones, large stones	Improbable: large stones	Poor: area reclaim, small stones, slope
210: Biddleman-----	Good	Improbable: small stones	Probable	Poor: too sandy, small stones, area reclaim
Biddleman-----	Good	Improbable: small stones	Probable	Poor: too sandy, small stones, area reclaim
211: Biddleman-----	Good	Improbable: small stones	Probable	Poor: too sandy, small stones, area reclaim
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Biddleman-----	Good	Improbable: small stones	Probable	Poor: too sandy, small stones, area reclaim
213: Biddleman-----	Good	Improbable: small stones	Probable	Poor: too sandy, small stones, area reclaim
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
214: Biddleman-----	Good	Improbable: small stones	Probable	Poor: too sandy, small stones, area reclaim
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
214 (con.): Ruhe-----	Poor: depth to rock	Probable	Probable	Poor: depth to rock, too sandy, small stones
215: Biddleman-----	Good	Improbable: small stones	Probable	Poor: too sandy, small stones, area reclaim
Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
216: Biddleman-----	Good	Improbable: small stones	Probable	Poor: too sandy, small stones, area reclaim
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
220: Bango-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess salt, excess sodium
Stumble-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
221: Bango-----	Fair: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
Appian-----	Good	Probable	Improbable: too sandy	Poor: too sandy, excess sodium
222: Bango-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess salt, excess sodium
Playas-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, wetness
Chuckles-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
230: Uripnes-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Budihol-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
231: Uripnes-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Budihol-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Chill-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
232: Uripnes-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
240: Watoopah-----	Good	Probable	Probable	Poor: small stones, area reclaim
Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
241: Watoopah-----	Good	Probable	Probable	Poor: small stones, area reclaim
Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
241 (con.): Wholan-----	Good	Probable	Probable	Poor: area reclaim, excess salt
250: Rezave-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Singatse-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
260: Appian-----	Good	Probable	Improbable: too sandy	Poor: too sandy, excess sodium
Playas-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, wetness
261: Appian-----	Good	Probable	Improbable: too sandy	Poor: too sandy, excess sodium
262: Appian-----	Good	Probable	Improbable: too sandy	Poor: too sandy, excess sodium
Juva-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, small stones
Bango-----	Fair: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
270: Fubble-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Nicanor-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
280: Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
280 (con.): Chuckles-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
281: Troocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Ragtown-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
283: Troocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
284: Troocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
290: Huxley-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt, excess sodium
300: Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Colbar-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: large stones, slope
Rock Outcrop.				
301: Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Mirkwood-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Nemico-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, too clayey



TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
302: Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
304: Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Bombadil-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Loomer-----	Poor: depth to rock	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
305: Old Camp-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
Colbar-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: large stones, slope
Rock Outcrop.				
307: Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
308: Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Clanalpine-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
308 (con.): Colbar-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: large stones, slope
309: Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Pickup-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
Loomer-----	Poor: depth to rock	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
310: Rednik-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
311: Rednik-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
313: Rednik-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Ricert-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
313 (con.): Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
315: Rednik-----	Fair: large stones, slope	Probable	Probable	Poor: too sandy, small stones, area reclaim
Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Barnmot-----	Poor: shrink-swell, low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, slope
316: Rednik-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Rednik-----	Fair: large stones, slope	Probable	Probable	Poor: too sandy, small stones, area reclaim
317: Rednik-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Cleaver-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, small stones
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
320: Jung-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
321: Jung-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Desatoya-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Roca-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
322: Jung-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Puett-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Buffaran-----	Poor: cemented pan, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, too clayey, small stones
324: Jung-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Clanalpine-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Colbar-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: large stones, slope
325: Jung-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Clanalpine-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
330: Settlement-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
Louderback-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Rustigate-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Good
331: Settlement-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
Chuckles-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Rustigate-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Good
340: Slaw-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
Juva-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, small stones
Wholan-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
341: Slaw-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
Chuckles-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
342: Slaw-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Hessing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
343: Slaw-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
343 (con.): Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Chuckles-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
344: Slaw-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
Ragtown-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
350: Ricert-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
351: Ricert-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Chilper-----	Good	Improbable: small stones	Probable	Poor: too clayey, small stones, area reclaim
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
352: Ricert-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Desatoya-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
353: Ricert-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
358: Ricert-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Desatoya-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
359: Ricert-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
360: Ricert-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Rebel-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
370: Duco-----	Poor: depth to rock	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
370 (con.): Clanalpine-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Jung-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
371: Duco-----	Poor: depth to rock	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, small stones, slope
Clanalpine-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
373: Duco-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, small stones, slope
Itca-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
Puett-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
380: Itca-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
Clanalpine-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Rock Outcrop.				
381: Itca-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
Reluctan-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope



TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
381 (con.): Walti-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
390: Defler-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
391: Defler-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim
Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
400: Chuckles-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Playas-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, wetness
401: Chuckles-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Bango-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess salt, excess sodium
402: Chuckles-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Playas-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, wetness
Slaw-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
404: Chuckles-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Settlement-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
404 (con.): Rebel-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
410: Buffaran-----	Poor: cemented pan, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, too clayey, small stones
Desatoya-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
411: Buffaran-----	Poor: cemented pan, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, too clayey, small stones
Rebel-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
Puett-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
420: Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Hessing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Dun Glen-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
422: Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Hessing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
423: Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
423 (con.): Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
425: Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Hessing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Defler-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim
430: Kram-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Attella-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
432: Kram-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Findout-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
433: Kram-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Hopeka-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
440: Ravenswood-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
Itca-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
Walti-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones
450: Wholan-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Wholan-----	Good	Probable	Probable	Poor: area reclaim, excess salt
Defler-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim
460: Juva-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, small stones
Wholan-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Stumble-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
470: Hessing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Wholan-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Dun Glen-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
471: Hessing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Dun Glen-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
471 (con.): Bango-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess salt, excess sodium
480: Yody-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Buffaran-----	Poor: cemented pan, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, too clayey, small stones
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
481: Yody-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Ricert-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
484: Yody-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
491: Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Rebel-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
Wholan-----	Good	Probable	Probable	Poor: area reclaim, excess salt
492: Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Rebel-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
494: Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Rebel-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
500: Louderback-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Rustigate-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Good
Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
511: Grumblen-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Pickup-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
520: Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Inmo-----	Good	Improbable: thin layer	Improbable: too sandy	Poor: too sandy, small stones, area reclaim
530: Cleaver-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, small stones
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
530 (con.): Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
532: Cleaver-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, small stones
Ricert-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Barnmot-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, slope
533: Cleaver-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, small stones
Buffaran-----	Poor: cemented pan, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, too clayey, small stones
535: Cleaver-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, small stones
Bundorf-----	Poor: cemented pan, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, too clayey, small stones
536: Cleaver-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, small stones
Rednik-----	Fair: large stones, slope	Probable	Probable	Poor: too sandy, small stones, area reclaim
537: Cleaver-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, small stones
Otomo-----	Poor: cemented pan	Probable	Probable	Poor: cemented pan, small stones, area reclaim

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
538: Cleaver-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, small stones
Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Roic-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
540: Doughide-----	Poor: depth to rock, low strength, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
Itca-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
Ravenswood-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
551: Yerington-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
560: Izod-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
572: Rawe-----	Good	Probable	Probable	Poor: small stones, area reclaim
Malpais-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
580: Welch-----	Fair: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones
590: Rebel-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones



TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
590 (con.): Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Yody-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: small stones
591: Rebel-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
592: Rebel-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
Wholan-----	Good	Probable	Probable	Poor: area reclaim, excess salt
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
600: Hooten-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, small stones, excess salt
Bango-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess salt, excess sodium
Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
610: Barnmot-----	Poor: shrink-swell, low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, slope
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Badland-----	Poor: shrink-swell, low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, slope
620: Findout-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
620 (con.): Uripnes-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
621: Findout-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Izod-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
622: Findout-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
640: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Bango-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: excess salt, excess sodium
643: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
644: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Toulon-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
644 (con.): Chuckles-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
645: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
650: Labou-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Rock Outcrop.				
660: Loomer-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
Duco-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, small stones, slope
662: Loomer-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
Bombadil-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
670: Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Bedwyr-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
671: Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
Bedwyr-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Watcoopah-----	Good	Probable	Probable	Poor: small stones, area reclaim
672: Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Barnmot-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, slope
Chilper-----	Good	Improbable: small stones	Probable	Poor: too clayey, small stones, area reclaim
680: Bombadil-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
691: Osobb-----	Poor: depth to rock, slope	Improbable: thin layer	Improbable: thin layer	Poor: depth to rock, cemented pan, small stones
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
700: Clan Alpine-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
700 (con.): Itca-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, too clayey, small stones
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
710: Luning-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, small stones
Izo-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
730: Hooplite-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
731: Hooplite-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
732: Hooplite-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
732 (con.): Puett-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
733: Hooplite-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Jung-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
734: Hooplite-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Puett-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
735: Hooplite-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Duco-----	Poor: depth to rock, slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: depth to rock, small stones, slope
740: Packer-----	Poor: slope	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: small stones, area reclaim, slope
Layview-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
740 (con.): Hapgood-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
741: Packer-----	Fair: large stones	Improbable: excess fines, large stones	Improbable: excess fines, large stones	Poor: small stones, area reclaim
Hapgood-----	Fair: depth to rock, thin layer, large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Rock Outcrop.				
760: Burnborough-----	Fair: shrink-swell, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
Cleavage-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Welch-----	Fair: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
761: Burnborough-----	Fair: shrink-swell, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
Cleavage-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
Reluctan-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
770: Chilper-----	Good	Improbable: small stones	Probable	Poor: too clayey, small stones, area reclaim
Bundorf-----	Poor: cemented pan, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, too clayey, small stones
Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
772: Chilper-----	Good	Improbable: small stones	Probable	Poor: too clayey, small stones, area reclaim
Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Jerval-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
790: Jacratz-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Nayfan-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
800: Bedwyr-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, excess sodium
Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
802: Bedwyr-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Bedzee-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Jobpeak-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
820: Aboten-----	Good	Improbable: small stones	Probable	Poor: cemented pan, small stones, area reclaim
Inmo-----	Good	Improbable: thin layer	Improbable: thin layer	Poor: too sandy, small stones, area reclaim



TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
820 (con.): Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
830: Corral-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Celeton-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Bedwyr-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, excess sodium
840: Belate-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
Roca-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
Cleavage-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
850: Walti-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones
Roca-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
Belate-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
860: Teguro-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Colbar-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: large stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
860 (con.): Cleavage-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
870: Chill-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Cleavage-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
880: Coppereid-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Findout-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
900: Playas-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, wetness
901: Dune Land-----	Fair: slope	Probable	Improbable: too sandy	Poor: too sandy, slope
Isolde-----	Fair: slope	Probable	Improbable: too sandy	Poor: too sandy, slope
902: Badland-----	Poor: shrink-swell, low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, slope
903: Badland-----	Poor: shrink-swell, low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, slope
Rebel-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
903 (con.): Yody-----	Poor: cemented pan	Improbable: excess fines	Improbable: excess fines	Poor: small stones
910: Theriot-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Findout-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
930: Layview-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Packer-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
Hapgood-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
940: Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rubble Land-----	Poor: large stones	Improbable: small stones, large stones	Improbable: large stones	Poor: area reclaim, small stones
960: Kolda-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Umberland-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
970: Jobpeak-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Teguro-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
980: Madeline-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Millerlux-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
990: Millerlux-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Ninemile-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Madeline-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
1000: Stumble-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
1010: Downeyville----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Stewval-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Blacktop-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1011: Downeyville-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Blacktop-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1012: Downeyville-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Downeyville-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Blacktop-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1013: Downeyville-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Downeyville-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Gabbvally-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1020: Unsel-----	Good	Probable	Probable	Poor: small stones, area reclaim
Annaw-----	Good	Probable	Probable	Poor: small stones, area reclaim
Izo-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
1023: Unsel-----	Good	Probable	Probable	Poor: small stones, area reclaim

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1023 (con.): Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
1024: Unsel-----	Good	Probable	Probable	Poor: small stones, area reclaim
Desatoya-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Roic-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1025: Unsel-----	Good	Probable	Probable	Poor: small stones, area reclaim
Desatoya-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
1026: Unsel-----	Good	Probable	Probable	Poor: small stones, area reclaim
Pineval-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Defler-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim
1027: Unsel-----	Good	Probable	Probable	Poor: small stones, area reclaim
Roic-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
Annaw-----	Good	Probable	Probable	Poor: small stones, area reclaim

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1030: Golddyke-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Blacktop-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Koyen-----	Good	Probable	Probable	Poor: area reclaim
1040: Terlco-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Annaw-----	Good	Probable	Probable	Poor: small stones, area reclaim
Izo-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
1050: Ceejay-----	Poor: depth to rock, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Olac-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
1061: Olac-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Pirouette-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, cemented pan, small stones
1062: Olac-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1062 (con.): Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Ceejay-----	Poor: depth to rock, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
1071: Ganaflan-----	Poor: depth to rock	Probable	Probable	Poor: small stones, area reclaim, excess salt
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
1090: Umberland-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
1100: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Olac-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1101: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1102: Theon-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope



TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1102 (con.): Theon-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1104: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Roic-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1120: Patna-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: thin layer
Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Juva-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, small stones
1121: Patna-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: thin layer
1130: Malpais-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Malpais-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
1140: Roic-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
Biddleman-----	Good	Improbable: small stones	Probable	Poor: too sandy, small stones, area reclaim
Hooten-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, small stones, excess salt

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1142: Roic-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
1143: Roic-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
1144: Roic-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Celeton-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1145: Roic-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Patna-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: thin layer
1150: Phing-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Buffaran-----	Poor: cemented pan, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, too clayey, small stones

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1160: Sojur-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1171: Tocan-----	Good	Probable	Probable	Poor: too sandy, small stones
Aboten-----	Good	Improbable: small stones	Probable	Poor: cemented pan, small stones, area reclaim
1180: Jerval-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
1200: Arclay-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
1210: Biga-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
Granshaw-----	Good	Probable	Improbable: too sandy	Poor: small stones
Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
1211: Biga-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
1212: Biga-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
Roic-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1212 (con.): Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
1220: Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
1230: Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
1231: Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
1232: Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Rednik-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Trocken-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
1233: Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1233 (con.): Buckaroo-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
1280: Soar-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Arclay-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Soar-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
1290: Slocave-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Vium-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
1300: Loveloock-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
1301: Loveloock-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness
1320: Gardella-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: cemented pan, too clayey, excess salt
1330: Parran-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
1331: Parran-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt

TABLE 10--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1331 (con.): Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
1332: Parran-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
Umberland-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, excess sodium
1340: Inmo-----	Good	Improbable: thin layer	Improbable: too sandy	Poor: too sandy, small stones, area reclaim
Inmo-----	Good	Improbable: thin layer	Improbable: thin layer	Poor: too sandy, small stones, area reclaim

TABLE 11.--WATER MANAGEMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
100: Budihol-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Chill-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rock Outcrop.						
102: Budihol-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Minneha-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rock Outcrop.						
110: Bimmer-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Chill-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
120: Nemico-----	Severe: depth to rock, cemented pan, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock cemented pan
Mirkwood-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Rock Outcrop.						
130: Bedzee-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock erodes easily
Loomer-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Bedwyr-----	Severe: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
140: Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
141: Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
142: Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Appian-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
Ruhe-----	Severe: seepage, depth to rock	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, depth to rock too sandy
143: Hawsley-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Gamgee-----	Severe: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, percs slowly, excess sodium	Slope, erodes easily
144: Hawsley-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
146: Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
Juva-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Droughty, erodes easily, flooding	Erodes easily, too sandy



TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
147: Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Celeton-----	Severe: depth to rock	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Depth to rock
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
150: Buckaroo-----	Severe: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope
Bluewing-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, large stones, too sandy
152: Buckaroo-----	Severe: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope
Watoopah-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Rezave-----	Severe: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock
153: Buckaroo-----	Severe: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope
Rednik-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
154: Buckaroo-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Favorable
Rednik-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Genegra-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
155: Buckaroo-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Favorable
Genegraf-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
158: Buckaroo-----	Severe: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope
Celeton-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Wholan-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing, erodes easily	Erodes easily, soil blowing
159: Buckaroo-----	Severe: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope
Genegraf-----	Severe: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Slope
160: Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rock Outcrop.						
161: Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Uripnes-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Rock Outcrop.						
162: Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
162 (con.): Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rezave-----	Severe: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
164: Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Loomer-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
170: Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Dune Land-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
171: Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Parran-----	Slight	Severe: excess salt	Severe: slow refill, salty water	Percs slowly, frost action, excess salt	Wetness, slow intake, percs slowly	Erodes easily, wetness, percs slowly
Appian-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
172: Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Hawsley-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
173: Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
174: Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Ragtown-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Percs slowly, erodes easily, flooding	Erodes easily, percs slowly
180: Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
Inmo-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
181: Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
184: Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
185: Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
Toulon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Rock Outcrop.						
186: Bluewing-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Slope, large stones, too sandy
Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
190: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
191: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rock Outcrop.						
192: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
193: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Mirkwood-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Rock Outcrop.						
194: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Hooplite-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
199: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Olac-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
200: Pirouette-----	Severe: depth to rock, cemented pan	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, depth to rock cemented pan
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Rock Outcrop.						
201: Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Celeton-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
203: Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
204: Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
206: Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
206 (con.): Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
207: Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Rezave-----	Severe: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock
Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
208: Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Rubble Land-----	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones
210: Biddleman-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Too sandy
Biddleman-----	Severe: seepage, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Slope, too sandy
211: Biddleman-----	Severe: seepage	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, excess sodium	Too sandy
Trocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Biddleman-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Too sandy

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
213: Biddleman-----	Severe: seepage, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Slope, too sandy
Trocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
214: Biddleman-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Too sandy
Trocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Ruhe-----	Severe: seepage, depth to rock	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, depth to rock too sandy
215: Biddleman-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Droughty, excess sodium, excess salt	Too sandy
Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
216: Biddleman-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
Trocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
220: Bango-----	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, soil blowing, excess sodium	Erodes easily, too sandy, soil blowing
Stumble-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
221: Bango-----	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, fast intake, excess sodium	Erodes easily
Appian-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Droughty, erodes easily, excess sodium	Erodes easily, too sandy



TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
222: Bango-----	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, excess sodium	Erodes easily, too sandy, soil blowing
Playas-----	Slight	Severe: hard to pack, ponding, excess salt	Severe: slow refill, salty water	Ponding, percs slowly, excess salt	Ponding, droughty	Erodes easily, ponding, percs slowly
Chuckles-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
230: Uripnes-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Budihol-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rock Outcrop.						
231: Uripnes-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Budihol-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Chill-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
232: Uripnes-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Rock Outcrop.						
240: Watoopah-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Genegraf-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Buckaroo-----	Severe: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
241: Watcoopah-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Buckaroo-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Favorable
Wholan-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing, erodes easily	Erodes easily, soil blowing
250: Rezave-----	Severe: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rock Outcrop.						
260: Appian-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Droughty, soil blowing, excess sodium	Too sandy, soil blowing
Playas-----	Slight	Severe: hard to pack, ponding, excess salt	Severe: slow refill, salty water	Ponding, percs slowly, excess salt	Ponding, droughty, percs slowly	Erodes easily, ponding, percs slowly
261: Appian-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
262: Appian-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Droughty, soil blowing, excess sodium	Too sandy, soil blowing
Juva-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Droughty, erodes easily, flooding	Erodes easily, too sandy
Bango-----	Slight	Severe: excess sodium	Severe: no water	Deep to water	Excess sodium, excess salt	Erodes easily
270: Fubble-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
Nicanor-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
280: Troocken-----	Severe: seepage	Severe: excess salt	Severe: no water	Deep to water	Soil blowing, erodes easily, flooding	Erodes easily, too sandy, soil blowing
Chuckles-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
281: Troocken-----	Moderate: seepage	Moderate: large stones, excess salt	Severe: no water	Deep to water	Droughty, soil blowing, erodes easily	Large stones, erodes easily too sandy
Ragtown-----	Slight	Severe: hard to pack, excess salt	Severe: no water	Deep to water	Percs slowly, erodes easily, excess salt	Erodes easily, percs slowly
283: Troocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
284: Troocken-----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Slope, too sandy
290: Huxley-----	Severe: seepage	Severe: seepage, piping, excess sodium	Severe: no water	Deep to water	Droughty, percs slowly, excess sodium	Too sandy
300: Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Colbar-----	Severe: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Rock Outcrop.						
301: Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Mirkwood-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
301 (con.): Nemico-----	Severe: depth to rock, cemented pan, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock cemented pan
302: Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rock Outcrop.						
304: Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Bombadil-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
Loomer-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
305: Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Colbar-----	Severe: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Rock Outcrop.						
307: Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Rock Outcrop.						
308: Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Clanalpine-----	Severe: slope	Moderate: thin layer, large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
308 (con.): Colbar-----	Severe: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
309: Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Pickup-----	Severe: slope	Moderate: thin layer, large stones	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, depth to rock
Loomer-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
310: Rednik-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Trocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
311: Rednik-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Trocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Genegraf-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
313: Rednik-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy
Ricert-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, excess sodium, excess salt	Erodes easily, too sandy
Trocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
315: Rednik-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
315 (con.): Genegra-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Barnmot-----	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, slow intake, percs slowly	Slope, percs slowly
316: Rednik-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy
Rednik-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy
317: Rednik-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Cleaver-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
Trocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
320: Jung-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Rock Outcrop.						
321: Jung-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
Desatoya-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Large stones, too sandy
Roca-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
322: Jung-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
322 (con.): Puett-----	Severe: depth to rock, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Slope, depth to rock soil blowing
Buffaran-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
324: Jung-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
Clanalpine-----	Severe: slope	Moderate: thin layer, large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Colbar-----	Severe: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
325: Jung-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Clanalpine-----	Severe: slope	Moderate: thin layer, large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
330: Settlement-----	Slight	Severe: wetness, excess sodium	Severe: slow refill	Percs slowly, frost action, excess salt	Wetness, slow intake, percs slowly	Wetness, percs slowly
Louderback-----	Severe: seepage	Severe: piping	Severe: cutbanks cave	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
Rustigate-----	Moderate: seepage	Severe: piping	Moderate: deep to water, slow refill	Deep to water	Erodes easily	Erodes easily
331: Settlement-----	Slight	Severe: wetness, excess sodium	Severe: slow refill	Percs slowly, frost action, excess salt	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly
Chuckles-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
Rustigate-----	Moderate: seepage	Severe: piping	Moderate: deep to water, slow refill	Deep to water	Erodes easily	Erodes easily

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
340: Slaw-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Peres slowly, erodes easily, flooding	Erodes easily, peres slowly
Juva-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Droughty, erodes easily, flooding	Erodes easily, too sandy
Wholan-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, flooding, excess salt	Erodes easily
341: Slaw-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Peres slowly, erodes easily, flooding	Erodes easily, peres slowly
Chuckles-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
342: Slaw-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Peres slowly, erodes easily, flooding	Erodes easily, peres slowly
Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily, too sandy
Hessing-----	Severe: seepage	Severe: seepage, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily, too sandy
343: Slaw-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Peres slowly, erodes easily, flooding	Erodes easily, peres slowly
Trocken-----	Severe: seepage	Severe: excess salt	Severe: no water	Deep to water	Flooding, excess salt	Too sandy
Chuckles-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
344: Slaw-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Peres slowly, erodes easily, flooding	Erodes easily, peres slowly
Ragtown-----	Slight	Severe: hard to pack, excess salt	Severe: no water	Deep to water	Soil blowing, peres slowly, erodes easily	Erodes easily, soil blowing, peres slowly
350: Ricert-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, excess sodium, excess salt	Erodes easily, too sandy



TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
350 (con.): Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
351: Ricert-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, excess sodium, excess salt	Erodes easily, too sandy
Chilper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
Pineval-----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Slope, too sandy
352: Ricert-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Erodes easily, too sandy
Desatoya-----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, too sandy
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
353: Ricert-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, excess sodium, excess salt	Erodes easily, too sandy
Trocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
358: Ricert-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, excess sodium, excess salt	Erodes easily, too sandy
Desatoya-----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, too sandy
Trocken-----	Severe: slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
359:						
Ricert-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Erodes easily, too sandy
Celeton-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Trocken-----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Slope, too sandy
360:						
Ricert-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, excess sodium, excess salt	Erodes easily, too sandy
Trocken-----	Severe: slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy
Rebel-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily
370:						
Duco-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Clanalpine-----	Severe: slope	Moderate: thin layer, large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Jung-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
371:						
Duco-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Clanalpine-----	Severe: slope	Moderate: thin layer, large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
373:						
Duco-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Itca-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
373 (con.): Puett-----	Severe: depth to rock, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Slope, depth to rock soil blowing
380: Itca-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
Clanalpine-----	Severe: slope	Moderate: thin layer, large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Rock Outcrop.						
381: Itca-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
Reluctan-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, large stones, depth to rock
Walti-----	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
390: Defler-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Favorable
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
391: Defler-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Favorable
Trocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
400: Chuckles-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
Playas-----	Slight	Severe: hard to pack, ponding, excess salt	Severe: slow refill, salty water	Ponding, percs slowly, excess salt	Ponding, droughty	Erodes easily, ponding, percs slowly
401: Chuckles-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
401 (con.): Bango-----	Slight	Severe: piping, excess sodium	Severe: no water	Deep to water	Fast intake, soil blowing, excess sodium	Erodes easily, too sandy, soil blowing
402: Chuckles-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
Playas-----	Slight	Severe: hard to pack, ponding, excess salt	Severe: slow refill, salty water	Ponding, percs slowly, excess salt	Ponding, droughty	Erodes easily, ponding, percs slowly
Slaw-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Percs slowly	Erodes easily, percs slowly
404: Chuckles-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
Settlement-----	Slight	Severe: wetness, excess sodium	Severe: slow refill	Percs slowly, frost action, excess salt	Wetness, slow intake, percs slowly	Wetness, percs slowly
Rebel-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily
410: Buffaran-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
Desatoya-----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, too sandy
411: Buffaran-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
Rebel-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily
Puett-----	Severe: depth to rock, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Slope, depth to rock soil blowing
420: Trocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Hessing-----	Severe: seepage	Severe: seepage, excess salt	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Erodes easily, too sandy

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
420 (con.): Dun Glen-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily
422: Troocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Hessing-----	Severe: seepage	Severe: seepage, excess salt	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Erodes easily, too sandy
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
423: Troocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
Troocken-----	Severe: seepage	Severe: excess salt	Severe: no water	Deep to water	Soil blowing, erodes easily, flooding	Erodes easily, too sandy, soil blowing
425: Troocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Hessing-----	Severe: seepage	Severe: seepage, excess salt	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Erodes easily, too sandy
Defler-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Favorable
430: Kram-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Attella-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
Rock Outcrop.						
432: Kram-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Findout-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
432 (con.): Rock Outcrop.						
433: Kram-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Hopeka-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rock Outcrop.						
440: Ravenswood-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
Itca-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
Walti-----	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
450: Wholan-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, flooding, excess salt	Erodes easily
Wholan-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
Defler-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Favorable
460: Juva-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Droughty, erodes easily, flooding	Erodes easily, too sandy
Wholan-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, flooding, excess salt	Erodes easily
Stumble-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
470: Hessing-----	Severe: seepage	Severe: seepage, excess salt	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Erodes easily, too sandy
Wholan-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, flooding, excess salt	Erodes easily

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
470 (con.): Dun Glen-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily
471: Hessing-----	Severe: seepage	Severe: seepage, excess salt	Severe: no water	Deep to water	Slope, erodes easily, excess salt	Erodes easily, too sandy
Dun Glen-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily
Bango-----	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, soil blowing, excess sodium	Erodes easily, too sandy, soil blowing
480: Yody-----	Severe: seepage	Moderate: thin layer, seepage	Severe: no water	Deep to water	Slope, cemented pan	Cemented pan, too sandy
Buffaran-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
481: Yody-----	Severe: seepage	Moderate: thin layer, seepage	Severe: no water	Deep to water	Slope, cemented pan	Cemented pan, too sandy
Ricert-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, excess sodium, excess salt	Erodes easily, too sandy
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
484: Yody-----	Severe: seepage	Moderate: thin layer, seepage	Severe: no water	Deep to water	Slope, cemented pan	Cemented pan, too sandy
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
491: Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Rebel-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
491 (con.): Wholan-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing, erodes easily	Erodes easily, soil blowing
492: Pineval-----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Slope, too sandy
Rebel-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily
494: Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Buckaroo-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Favorable
Rebel-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily
500: Louderback-----	Severe: seepage	Severe: piping	Severe: cutbanks cave	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
Rustigate-----	Moderate: seepage	Severe: piping	Moderate: deep to water, slow refill	Deep to water	Erodes easily	Erodes easily
Isolde-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
511: Grumbler-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock percs slowly
Pickup-----	Severe: slope	Moderate: thin layer, large stones	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, depth to rock
520: Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
Inmo-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing



TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
530: Cleaver-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
Trocken-----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Slope, too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
532: Cleaver-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
Ricert-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, excess sodium, excess salt	Erodes easily, too sandy
Barnmot-----	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, slow intake, percs slowly	Slope, percs slowly
533: Cleaver-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
Buffaran-----	Severe: cemented pan, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Slope, cemented pan, percs slowly
535: Cleaver-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
Bundorf-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
536: Cleaver-----	Severe: cemented pan, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Slope, cemented pan, percs slowly
Rednik-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy
537: Cleaver-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
537 (con.): Otomo-----	Severe: seepage, cemented pan, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, cemented pan	Slope, cemented pan, too sandy
538: Cleaver-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Cemented pan, percs slowly
Genegraf-----	Severe: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, excess sodium	Slope
Roic-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily
540: Doughide-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Itca-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
Ravenswood-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
551: Yerington-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
560: Izod-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Rock Outcrop.						
572: Rawe-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope
Malpais-----	Severe: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones
580: Welch-----	Moderate: seepage, slope	Severe: wetness	Severe: slow refill	Flooding, frost action, slope	Slope, wetness, flooding	Wetness

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
590: Rebel-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Yody-----	Severe: seepage	Moderate: thin layer, seepage	Severe: no water	Deep to water	Slope, cemented pan	Cemented pan, too sandy
591: Rebel-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily
592: Rebel-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily
Wholan-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing, erodes easily, excess salt	Erodes easily, soil blowing
Pineval-----	Moderate: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy
600: Hooten-----	Severe: cemented pan	Severe: piping, excess salt	Severe: no water	Deep to water	Fast intake, cemented pan, excess salt	Cemented pan, erodes easily
Bango-----	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, soil blowing, excess sodium	Erodes easily, too sandy, soil blowing
Isolde-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
610: Barnmot-----	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, slow intake, percs slowly	Slope, percs slowly
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
Badland-----	Severe: slope	Severe: hard to pack, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, erodes easily percs slowly
620: Findout-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Uripnes-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
620 (con.): Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
621: Findout-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Izod-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Rock Outcrop.						
622: Findout-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Rock Outcrop.						
640: Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily, too sandy
Bango-----	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, soil blowing, excess sodium	Erodes easily, too sandy, soil blowing
643: Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Droughty, soil blowing, excess salt	Erodes easily, too sandy, soil blowing
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
644: Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily, too sandy
Toulon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Chuckles-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
645: Mazuma-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing, erodes easily, excess salt	Erodes easily, too sandy, soil blowing
650: Labou-----	Severe: depth to rock, slope	Severe: excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock percs slowly
Rock Outcrop.						
660: Loomer-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Duco-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
662: Loomer-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Bombadil-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
670: Celeton-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Genegraf-----	Severe: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Slope
Bedwyr-----	Severe: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly
671: Celeton-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Bedwyr-----	Severe: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly
Watoopah-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
672: Celeton-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Barnmot-----	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, slow intake, percs slowly	Slope, percs slowly
Chilper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
680: Bombadil-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
691: Osobb-----	Severe: depth to rock, cemented pan, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
700: Clanalpine-----	Severe: slope	Moderate: thin layer, large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Itca-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
710: Luning-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Izo-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
730: Hooplite-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
731: Hooplite-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
732: Hooplite-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Puett-----	Severe: depth to rock, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Slope, depth to rock soil blowing
733: Hooplite-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Jung-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
734: Hooplite-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
734 (con.): Puett-----	Severe: depth to rock, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Slope, depth to rock soil blowing
735: Hooplite-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Duco-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
740: Packer-----	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones
Layview-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Hapgood-----	Severe: slope	Moderate: thin layer, seepage	Severe: no water	Deep to water	Slope, droughty	Slope
741: Packer-----	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones
Hapgood-----	Severe: slope	Moderate: thin layer, large stones	Severe: no water	Deep to water	Slope, large stones	Slope, large stones
Rock Outcrop.						
760: Burnborough-----	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, droughty	Slope, large stones
Cleavage-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Welch-----	Moderate: slope	Severe: wetness	Severe: slow refill	Flooding, frost action, slope	Slope, wetness, flooding	Wetness
761: Burnborough-----	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, droughty	Slope, large stones



TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
761 (con.): Cleavage-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Reluctan-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, large stones, depth to rock
770: Chilper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
Bundorf-----	Severe: cemented pan	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Cemented pan, percs slowly
Trocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
772: Chilper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
Trocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Jerval-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
790: Jacratz-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
Nayfan-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
800: Bedwyr-----	Severe: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly
Celeton-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
802: Bedwyr-----	Severe: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
802 (con.): Bedzee-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock erodes easily
Jobpeak-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
820: Aboten-----	Severe: seepage, cemented pan	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Cemented pan, too sandy
Inmo-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, flooding	Slope, too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
830: Corral-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
Celeton-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Bedwyr-----	Severe: depth to rock, slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly
840: Belate-----	Severe: slope	Slight	Severe: no water	Deep to water	Slope	Slope
Roca-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
Cleavage-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
850: Walti-----	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly
Roca-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
Belate-----	Severe: slope	Slight	Severe: no water	Deep to water	Slope	Slope

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
860: Teguro-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
Colbar-----	Severe: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Cleavage-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
870: Chill-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Cleavage-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
880: Coppereid-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Findout-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
900: Playas-----	Slight	Severe: hard to pack, ponding, excess salt	Severe: slow refill, salty water	Ponding, percs slowly, excess salt	Ponding, droughty, percs slowly	Erodes easily, ponding, percs slowly
901: Dune Land-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
902: Badland-----	Severe: slope	Severe: hard to pack, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, erodes easily percs slowly
903: Badland-----	Severe: slope	Severe: hard to pack, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, erodes easily percs slowly

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
903 (con.): Rebel-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily
Yody-----	Severe: seepage	Moderate: thin layer, seepage	Severe: no water	Deep to water	Slope, cemented pan	Cemented pan, too sandy
910: Theriot-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Findout-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rock Outcrop.						
930: Layview-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Packer-----	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones
Hapgood-----	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope	Slope, large stones
940: Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Rubble Land----	Severe: seepage	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones
960: Kolda-----	Severe: seepage	Severe: ponding	Severe: slow refill	Ponding, percs slowly, frost action	Ponding, percs slowly, erodes easily	Erodes easily, ponding, percs slowly
Umberland-----	Slight	Severe: wetness, excess sodium, excess salt	Severe: slow refill, salty water	Percs slowly, frost action, excess salt	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly
970: Jobpeak-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
970 (con.): Teguro-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
Rock Outcrop.						
980: Madeline-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly
Millerlux-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly
990: Millerlux-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly
Ninemile-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
Madeline-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock percs slowly
1000: Stumble-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
1010: Downeyville-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Stewval-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Blacktop-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1011: Downeyville-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Blacktop-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1012: Downeyville-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1012 (con.): Downeyville-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Blacktop-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1013: Downeyville-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Downeyville-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Gabbvally-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock
1020: Unsel-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, excess salt	Too sandy
Annaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
Izo-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
1023: Unsel-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, excess salt	Too sandy
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
1024: Unsel-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, excess salt	Slope, too sandy
Desatoya-----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, too sandy
Roic-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily
1025: Unsel-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, excess salt	Too sandy

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1025 (con.): Desatoya-----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, too sandy
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
1026: Unsel-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, excess salt	Too sandy
Pineval-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Defler-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Favorable
1027: Unsel-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, excess salt	Too sandy
Roic-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily
Annaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
1030: Goldyke-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Blacktop-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Koyen-----	Severe: seepage	Severe: thin layer	Severe: no water	Deep to water	Slope, soil blowing	Too sandy, soil blowing
1040: Terlco-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Annaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
Izo-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1050:						
Ceejay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
Olac-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Rock Outcrop.						
1061:						
Olac-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Pirouette-----	Severe: depth to rock, cemented pan, slope	Severe: large stones, excess sodium	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
1062:						
Olac-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Ceejay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, large stones, depth to rock
1071:						
Ganaflan-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, depth to rock	Depth to rock, erodes easily, too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
Trocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
1090:						
Umberland-----	Slight	Severe: excess sodium, excess salt	Severe: slow refill	Percs slowly, frost action, excess salt	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly
Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing



TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1100: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Olac-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
1101: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
1102: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1104: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Roic-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1120: Patna-----	Severe: seepage	Severe: thin layer	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Soil blowing
Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
Juva-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Droughty, flooding	Too sandy
1121: Patna-----	Severe: seepage	Severe: thin layer	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Soil blowing
1130: Malpais-----	Severe: seepage	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1130 (con.): Malpais-----	Severe: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones
1140: Roic-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily
Biddleman-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Too sandy
Hooten-----	Severe: cemented pan	Severe: piping, excess salt	Severe: no water	Deep to water	Slope, fast intake, cemented pan	Cemented pan, erodes easily
1142: Roic-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily
Mazuma-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing, excess salt	Too sandy, soil blowing
Celeton-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1143: Roic-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily
Trocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Celeton-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1144: Roic-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Celeton-----	Severe: depth to rock, slope	Severe: piping, hard to pack	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1145: Roic-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1145 (con.): Patna-----	Severe: seepage	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, fast intake	Soil blowing
1150: Phing-----	Severe: slope	Severe: hard to pack	Severe: no water	Deep to water	Slope, percs slowly	Slope, percs slowly
Buffaran-----	Severe: cemented pan, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, cemented pan	Slope, cemented pan, percs slowly
1160: Sojur-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1171: Tocan-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, soil blowing	Erodes easily, too sandy, soil blowing
Aboten-----	Severe: seepage, cemented pan	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Cemented pan, too sandy
1180: Jerval-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Trocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
1200: Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1210: Biga-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, too sandy, percs slowly
Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy
1211: Biga-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, too sandy, percs slowly

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1212: Biga-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, too sandy, percs slowly
Roic-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Slope, depth to rock erodes easily
Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
1220: Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
1230: Genegraf-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
1231: Genegraf-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Trocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
1232: Genegraf-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Rednik-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, too sandy
Trocken-----	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1233: Genegraf-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Buckaroo-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Favorable
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Large stones, too sandy
1280: Soar-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Soar-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1290: Slocave-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Vium-----	Severe: depth to rock	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Depth to rock
1300: Lovelock-----	Moderate: seepage	Severe: hard to pack	Severe: no water	Deep to water	Favorable	Favorable
1301: Lovelock-----	Moderate: seepage	Severe: hard to pack, ponding, excess salt	Moderate: slow refill	Ponding, excess salt	Ponding, excess salt	Ponding
1320: Gardella-----	Severe: cemented pan	Severe: excess salt	Severe: no water	Deep to water	Percs slowly, cemented pan, rooting depth	Cemented pan, percs slowly
1330: Parran-----	Slight	Severe: excess salt	Severe: slow refill, salty water	Percs slowly, frost action, excess salt	Wetness, slow intake, percs slowly	Erodes easily, wetness, percs slowly
1331: Parran-----	Slight	Severe: excess salt	Severe: slow refill, salty water	Percs slowly, frost action, excess salt	Wetness, slow intake, percs slowly	Erodes easily, wetness, percs slowly

TABLE 11.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1331 (con.): Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
1332: Parran-----	Slight	Severe: excess salt	Severe: slow refill, salty water	Percs slowly, frost action, excess salt	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly
Umberland-----	Slight	Severe: wetness, excess sodium, excess salt	Severe: slow refill, salty water	Percs slowly, frost action, excess salt	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly
1340: Inmo-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy
Inmo-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
120 (con.): Nemico-----	0-3	Very stony sandy loam	SM	A-2	5-25	5-25	85-95	65-85	50-65	15-35	---	NP
	3-12	Gravelly clay, gravelly clay loam	SC, CL, CH	A-7	0	0-5	70-80	55-75	50-65	40-55	45-60	20-30
	12-15	Gravelly loam	SM, GM	A-4	0	0-5	65-90	55-70	45-60	35-45	25-30	NP-5
	15-16	Indurated			0	0	0	0	0	0	---	NP
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Mirkwood-----	0-2	Extremely stony loam	GM-GC, GM	A-2, A-1	25-40	10-30	40-60	25-40	20-35	15-25	15-25	NP-10
	2-11	Very gravelly loam, very gravelly clay loam	GC, SC	A-2	0-5	5-15	60-75	40-55	30-50	25-35	35-45	15-20
	11-21	Unweathered bedrock			0	0	0	0	0	0	---	NP
130: Bedzee-----	0-7	Very stony loam	CL	A-6	5-25	10-15	90-100	90-100	65-80	50-60	30-35	10-15
	7-17	Gravelly clay	CH, GC, SC	A-7	0	0-5	70-90	50-75	50-70	45-65	50-65	25-40
	17-21	Weathered bedrock			0	0	0	0	0	0	---	NP
Loomer-----	0-7	Gravelly loam	GM-GC, GC, CL-ML, CL	A-4, A-6	0	5-10	65-80	55-75	45-65	35-55	25-35	5-15
	7-17	Extremely cobbly clay, extremely gravelly clay, extremely cobbly clay loam	GC	A-2	0-5	30-55	30-45	20-35	15-30	15-25	40-55	20-35
	17-21	Unweathered bedrock			0	0	0	0	0	0	---	NP
Bedwyr-----	0-2	Stony loam	SC, CL	A-6	1-5	5-20	80-95	60-75	50-65	40-55	25-35	10-15
	2-10	Clay, silty clay	CH	A-7	0	0	95-100	90-100	90-100	70-80	50-60	25-30
	10-13	Gravelly clay, gravelly silty clay	CH	A-7	0	0	90-100	60-75	55-75	50-65	50-60	25-30
	13-23	Weathered bedrock			0	0	0	0	0	0	---	NP
140: Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP
141: Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
141 (con.): Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
142: Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP
Appian-----	0-6	Loamy sand	SM	A-2	0	0	95-100	90-100	50-65	15-30	---	NP
	6-12	Clay loam, sandy clay loam	SC, CL	A-6, A-7	0	0	95-100	90-100	75-90	40-60	35-45	15-20
	12-16	Stratified sand to sandy loam	SM	A-2	0	0	75-100	75-90	50-65	10-25	---	NP
	16-60	Sand, coarse sand	SP, SP-SM	A-1	0	0	85-100	75-90	30-50	0-10	---	NP
Ruhe-----	0-4	Gravelly loamy sand	SM, SP-SM	A-1	0	0-10	75-90	50-75	30-50	5-25	---	NP
	4-18	Gravelly loamy sand, gravelly sand, loamy sand	SM, SP-SM	A-1	0	0-10	75-90	50-85	30-50	5-25	---	NP
	18-28	Weathered bedrock			0	0	0	0	0	0	---	NP
	28-60	Stratified extremely cobbly coarse sand to sand	SP, GP	A-1	0	5-50	40-65	30-60	10-35	0-5	---	NP
143: Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP
Gamgee-----	0-3	Stony sandy loam	SM	A-2	1-5	15-20	80-90	65-80	50-65	25-35	---	NP
	3-24	Loam, clay loam	CL, SC	A-6	0	0-5	80-100	80-100	60-85	45-70	25-30	10-15
	24-55	Loam, sandy loam	ML, SM, CL-ML, SC-SM	A-4	0	0-5	80-95	75-90	60-75	35-60	15-25	NP-10
	55-60	Clay loam	CL, SC	A-6	0	0-5	80-100	75-100	60-85	45-70	25-30	10-15
144: Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
144 (con.): Theon-----	In											
	0-3	Very gravelly sandy loam	GM-GC, GM	A-2, A-1	0-1	5-10	40-60	30-50	20-45	15-35	20-30	NP-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-15	40-60	30-50	25-40	15-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Pirouette-----	0-4	Extremely stony fine sandy loam	SM, SC-SM	A-2	25-45	20-40	65-80	65-75	55-70	25-35	20-30	NP-10
	4-11	Very cobbly clay loam	SC, CL, GC	A-6, A-7	5-10	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
146: Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP
Juva-----	0-6	Loam	CL-ML	A-4	0	0-5	90-100	90-100	80-90	60-80	20-30	5-10
	6-60	Stratified gravelly sand to silt loam	SM	A-2, A-1	0	0-5	90-100	75-95	45-60	20-35	20-35	NP-5
147: Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP
Celeton-----	0-2	Cobbly sandy loam	SM	A-2, A-5	0	25-35	75-85	75-85	50-60	25-40	40-50	NP-5
	2-7	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	7-14	Weathered bedrock			0	0	0	0	0	0	---	NP
Bluewing-----	0-5	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	20-35	---	NP
	5-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
150: Buckaroo-----	In											
	0-4	Stony fine sandy loam	GM, SM	A-2, A-4	1-5	5-10	60-85	50-75	40-70	25-45	15-25	NP-5
	4-16	Clay, clay loam	CL, CH	A-7	0	0-5	90-100	85-100	75-90	65-80	40-55	15-30
	16-60	Very gravelly sandy loam	GM	A-1	0-2	0-15	45-60	30-45	20-35	10-25	15-25	NP-5
Bluewing-----	0-7	Stony loamy sand	GP-GM	A-1	1-5	5-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly coarse sand to extremely gravelly loamy sand	GP-GM	A-1	0-15	15-25	30-40	25-35	15-25	5-10	---	NP
152: Buckaroo-----	0-4	Stony fine sandy loam	GM, SM	A-2, A-4	1-5	5-10	60-85	50-75	40-70	25-45	15-25	NP-5
	4-16	Clay, clay loam	CL, CH	A-7	0	0-5	90-100	85-100	75-90	65-80	40-55	15-30
	16-60	Very gravelly sandy loam	GM	A-1	0-2	0-15	45-60	30-45	20-35	10-25	15-25	NP-5
Watoopah-----	0-2	Sand	SM	A-2	0	0	90-100	90-100	50-80	10-30	---	NP
	2-16	Sandy loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0	70-100	60-100	40-80	20-50	15-25	NP-5
	16-29	Gravelly loamy sand, gravelly sandy loam, sandy loam	SM	A-1, A-2, A-4	0	0-5	60-100	50-95	30-70	20-50	---	NP
	29-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1	0	0-5	60-85	50-75	30-50	5-25	---	NP
Rezave-----	0-3	Very stony fine sandy loam	SM	A-2, A-4	5-25	0-10	90-100	85-95	60-85	30-45	20-25	NP-5
	3-9	Clay, clay loam, stony clay	CL, CH	A-7	0-10	0-20	90-100	90-100	80-100	65-95	40-60	15-35
	9-15	Very gravelly clay, gravelly clay loam	SC, CL	A-7	0	0-10	80-90	50-70	50-70	35-60	40-50	15-25
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP
153: Buckaroo-----	0-4	Very gravelly very fine sandy loam	GM	A-1, A-2	0-1	0-5	45-60	30-45	25-40	15-30	15-25	NP-5
	4-16	Clay, clay loam	CL, CH	A-7	0	0-5	90-100	85-100	75-90	65-80	40-55	15-30
	16-60	Very gravelly sandy loam	GM	A-1	0-2	0-15	45-60	30-45	20-35	10-25	15-25	NP-5

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
153 (con.): Rednik-----	In											
	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP
Bluewing-----	0-7	Very gravelly loamy sand	GP-GM	A-1	0	0-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	10-25	30-40	25-35	15-25	5-10	---	NP
154: Buckaroo-----	0-4	Very gravelly very fine sandy loam	GM	A-1, A-2	0-1	0-5	45-60	30-45	25-40	15-30	15-25	NP-5
	4-16	Clay, clay loam	CL, CH	A-7	0	0-5	90-100	85-100	75-90	65-80	40-55	15-30
	16-60	Very gravelly sandy loam	GM	A-1	0-2	0-15	45-60	30-45	20-35	10-25	15-25	NP-5

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
154 (con.): Rednik-----	In											
	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP
Genegraf-----	0-6	Gravelly loam	SM, GM	A-4	0	0-5	60-80	55-70	45-60	35-50	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0-1	0-10	45-65	35-55	25-50	10-25	0-14	NP
155: Buckaroo-----	0-4	Very gravelly very fine sandy loam	GM	A-1, A-2	0-1	0-5	45-60	30-45	25-40	15-30	15-25	NP-5
	4-16	Clay, clay loam	CL, CH	A-7	0	0-5	90-100	85-100	75-90	65-80	40-55	15-30
	16-60	Very gravelly sandy loam	GM	A-1	0-2	0-15	45-60	30-45	20-35	10-25	15-25	NP-5
Genegraf-----	0-6	Very gravelly sandy loam	SM, GM	A-1	0	0-5	45-65	30-50	20-35	15-25	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0	0-10	45-60	35-50	25-45	10-25	15-25	NP-5

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

[illegible]

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
160 (con.): Singatse-----	In											
	0-4	Very gravelly loam	SM	A-2	0	0-10	70-80	45-55	35-45	25-35	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
161: Rock Outcrop.												
Singatse-----	0-4	Very gravelly loam	SM	A-2	0	0-10	70-80	45-55	35-45	25-35	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
Uripnes-----	0-4	Very stony sandy loam	SM	A-1	15-25	5-20	75-90	30-50	25-35	10-25	20-25	NP-5
	4-21	Weathered bedrock			0	0	0	0	0	0	---	NP
	21-25	Unweathered bedrock			0	0	0	0	0	0	---	NP
162: Singatse-----	0-4	Very gravelly loam	SM	A-2	0	0-10	70-80	45-55	35-45	25-35	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
Theon-----	0-3	Very gravelly sandy loam	GM-GC, GM	A-2, A-1	0-1	5-10	40-60	30-50	20-45	15-35	20-30	NP-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-15	40-60	30-50	25-40	15-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Rezave-----	0-3	Stony loam	SM, ML	A-4	1-5	10-20	90-100	85-95	60-85	45-60	20-25	NP-5
	3-9	Clay, clay loam, stony clay	CL, CH	A-7	0-10	0-20	90-100	90-100	80-100	65-95	40-60	15-35
	9-15	Very gravelly clay, gravelly clay loam	SC, CL	A-7	0	0-10	80-90	50-70	50-70	35-60	40-50	15-25
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
164: Singatse-----	In											
	0-4	Very gravelly sandy loam	SM	A-1	0	0-10	70-80	45-55	30-40	15-25	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
Loomer-----	0-7	Gravelly loam	GM-GC, GC, CL-ML, CL	A-4, A-6	0	5-10	65-80	55-75	45-65	35-55	25-35	5-15
	7-17	Extremely cobbly clay, extremely gravelly clay, extremely cobbly clay loam	GC	A-2	0-5	30-55	30-45	20-35	15-30	15-25	40-55	20-35
	17-21	Unweathered bedrock			0	0	0	0	0	0	---	NP
170: Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
Dune Land-----	0-6	Fine sand	SP, SP-SM, SM	A-3, A-2	0	0	100	100	60-80	0-25	0-14	NP
	6-60	Sand, fine sand	SP, SP-SM, SM	A-3, A-2	0	0	100	100	50-80	0-25	0-14	NP
Pirouette-----	0-4	Very stony loamy sand	SM	A-1, A-2	5-25	20-45	65-80	60-75	45-60	15-25	---	NP
	4-11	Very cobbly clay loam	SC, CL, GC	A-6, A-7	5-10	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
171: Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
Parran-----	0-8	Silty clay	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
	8-22	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
	22-60	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
Appian-----	0-4	Fine sand	SM	A-2	0	0	95-100	90-100	75-85	25-35	---	NP
	4-12	Clay loam, sandy clay loam	CL, SC	A-6, A-7	0	0	95-100	90-100	75-90	40-60	35-45	15-25
	12-46	Stratified fine sand to gravelly coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-90	40-70	5-20	---	NP
	46-60	Silty clay, clay	CH	A-7	0	0	100	100	95-100	85-100	55-65	30-40



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
172:	In											
Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
Pirouette-----	0-4	Very stony loamy sand	SM	A-1, A-2	5-25	20-45	65-80	60-75	45-60	15-25	---	NP
	4-11	Very cobbly clay loam	SC, CL, GC	A-6, A-7	5-10	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP
173:												
Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
174:												
Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
Ragtown-----	0-6	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-85	20-30	NP-10
	6-23	Stratified sandy clay loam to silty clay loam	CL	A-6	0	0	100	100	80-95	50-75	35-40	15-20
	23-60	Stratified silty clay loam to clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-55	20-30
180:												
Bluewing-----	0-7	Stony loamy sand	GP-GM	A-1	1-5	5-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly coarse sand to extremely gravelly loamy sand	GP-GM	A-1	0-15	15-25	30-40	25-35	15-25	5-10	---	NP
Inmo-----	0-8	Gravelly sandy loam	SM	A-1, A-2	0	0-5	85-95	60-75	40-55	10-15	20-25	NP-5
	8-40	Stratified extremely gravelly coarse sand to very gravelly loamy sand	SP, SP-SM	A-1	0	0-5	75-85	20-35	10-25	0-10	---	NP
	40-60	Very gravelly loamy coarse sand	SM	A-1	0	0-5	80-90	40-55	25-40	10-15	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
181: Bluewing-----	In											
	0-7	Very gravelly loamy sand	GP-GM	A-1	0	0-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	10-25	30-40	25-35	15-25	5-10	---	NP
184: Bluewing-----	0-7	Very gravelly loamy sand	GP-GM	A-1	0	0-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	10-25	30-40	25-35	15-25	5-10	---	NP
Bluewing-----	0-7	Stony loamy sand	GP-GM	A-1	1-5	5-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly coarse sand to extremely gravelly loamy sand	GP-GM	A-1	0-15	15-25	30-40	25-35	15-25	5-10	---	NP
Pineval-----	0-5	Very cobbly loam	SC-SM, GM-GC	A-4	0	30-40	65-80	55-70	45-60	35-50	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0-5	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0	30-60	20-50	15-40	5-20	0-14	NP
185: Rock Outcrop.												
Bluewing-----	0-7	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	20-35	---	NP
	7-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

[illegible]

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
191 (con.): Theon-----	In											
	0-3	Stony sandy loam	GM-GC	A-2	1-5	10-20	55-65	45-55	35-45	20-30	20-25	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very gravelly loam	SM	A-2	0	0-10	70-80	45-55	35-45	25-35	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
192: Theon-----	0-3	Very gravelly sandy loam	GM-GC, GM	A-2, A-1	0-1	5-10	40-60	30-50	20-45	15-35	20-30	NP-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-15	40-60	30-50	25-40	15-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
193: Rock Outcrop.												
Theon-----	0-3	Stony sandy loam	GM-GC	A-2	1-5	10-20	55-65	45-55	35-45	20-30	20-25	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Mirkwood-----	0-2	Extremely stony loam	GM-GC, GM	A-2, A-1	25-40	10-30	40-60	25-40	20-35	15-25	15-25	NP-10
	2-11	Very gravelly loam, very gravelly clay loam	GC, SC	A-2	0-5	5-15	60-75	40-55	30-50	25-35	35-45	15-20
	11-21	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
194: Theon-----	0-3	Very stony fine sandy loam	GM-GC, SC-SM	A-2, A-4	5-25	10-30	55-80	45-75	35-50	20-45	20-30	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Hooplite-----	0-4	Very gravelly fine sandy loam	GM-GC	A-2	0	0-10	45-60	35-50	30-45	10-20	20-30	5-10
	4-8	Very gravelly loam, very gravelly clay loam	GC	A-2, A-6	0	0-15	45-60	35-50	30-45	25-40	30-40	10-15
	8-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very stony sandy loam	GM	A-1	5-25	15-25	40-60	35-55	20-35	10-20	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	GM	A-1, A-2	0-5	0-10	35-55	30-50	20-45	10-35	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
199: Theon-----	0-3	Very stony fine sandy loam	GM-GC, SC-SM	A-2, A-4	5-25	10-30	55-80	45-75	35-50	20-45	20-30	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Olac-----	0-3	Extremely stony loam	GC	A-2	25-40	15-25	40-60	35-55	25-40	20-30	25-30	10-15
	3-13	Extremely gravelly clay loam, extremely gravelly loam	GC	A-2	5-10	10-20	30-45	20-35	15-30	10-25	30-40	15-20
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very cobbly loam	GM	A-2, A-4	0-5	45-60	55-65	50-60	45-55	30-40	20-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	GM	A-1, A-2	0-5	0-10	35-55	30-50	20-45	10-35	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
200: Rock Outcrop.												
Pirouette-----	0-4	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-4	5-25	25-30	65-80	65-75	55-70	35-50	20-30	NP-10
	4-11	Very cobbly clay loam	SC, CL, GC	A-6, A-7	0-5	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Osobb-----	0-3	Extremely stony sandy loam	GP-GM, GM, GM-GC	A-1, A-2	25-45	25-45	35-55	30-50	20-40	5-25	20-30	NP-10
	3-17	Extremely cobbly very fine sandy loam, very cobbly fine sandy loam, very cobbly loam	GP-GM, GM, GM-GC	A-1, A-2	5-15	30-50	25-60	20-50	15-35	5-20	20-30	NP-10
	17-18	Indurated			0	0	0	0	0	0	---	NP
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
201: Pirouette-----	0-4	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-4	5-25	25-30	65-80	65-75	55-70	35-50	20-30	NP-10
	4-11	Very cobbly clay loam	SC, CL, GC	A-6, A-7	0-5	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Osobb-----	0-3	Extremely stony fine sandy loam	GP-GM, GM, GM-GC	A-1, A-2	25-45	25-45	35-55	30-50	20-40	5-25	20-30	NP-10
	3-17	Extremely cobbly very fine sandy loam, very cobbly fine sandy loam, very cobbly loam	GP-GM, GM, GM-GC	A-1, A-2	5-15	30-50	25-60	20-50	15-35	5-20	20-30	NP-10
	17-18	Indurated			0	0	0	0	0	0	---	NP
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
Celeton-----	0-2	Very cobbly sandy loam	GM, SM	A-1, A-2	0	35-45	45-70	40-70	30-50	15-35	40-50	NP-5
	2-7	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	7-14	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
203: Pirouette-----	0-4	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-4	5-25	25-30	65-80	65-75	55-70	35-50	20-30	NP-10
	4-11	Very cobbly clay loam	SC, CL, GC	A-6, A-7	0-5	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP
204: Pirouette-----	0-4	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-4	5-25	25-30	65-80	65-75	55-70	35-50	20-30	NP-10
	4-11	Very cobbly clay loam	SC, CL, GC	A-6, A-7	0-5	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Osobb-----	0-3	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-1, A-2, A-4	5-25	5-45	60-80	50-70	45-65	15-40	20-30	NP-10
	3-17	Extremely cobbly very fine sandy loam, very cobbly fine sandy loam, very cobbly loam	GP-GM, GM, GM-GC	A-1, A-2	5-15	30-50	25-60	20-50	15-35	5-20	20-30	NP-10
	17-18	Indurated			0	0	0	0	0	0	---	NP
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
206: Pirouette-----	0-4	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-4	5-25	25-30	65-80	65-75	55-70	35-50	20-30	NP-10
	4-11	Very cobbly clay loam	SC, CL, GC	A-6, A-7	0-5	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
206 (con.): Osobb-----	In											
	0-3	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-1, A-2, A-4	5-25	5-45	60-80	50-70	45-65	15-40	20-30	NP-10
	3-17	Extremely cobble very fine sandy loam, very cobble fine sandy loam, very cobble loam	GP-GM, GM, GM-GC	A-1, A-2	5-15	30-50	25-60	20-50	15-35	5-20	20-30	NP-10
	17-18	Indurated			0	0	0	0	0	0	---	NP
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-3	Stony sandy loam	SM	A-1	1-5	5-15	60-70	55-65	35-45	15-25	15-25	NP-5
	3-13	Very cobble clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
207: Pirouette-----	0-4	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-4	5-25	25-30	65-80	65-75	55-70	35-50	20-30	NP-10
	4-11	Very cobble clay loam	SC, CL, GC	A-6, A-7	0-5	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Rezave-----	0-3	Very stony fine sandy loam	SM	A-2, A-4	5-25	0-10	90-100	85-95	60-85	30-45	20-25	NP-5
	3-9	Clay, clay loam, stony clay	CL, CH	A-7	0-10	0-20	90-100	90-100	80-100	65-95	40-60	15-35
	9-15	Very gravelly clay, gravelly clay loam	SC, CL	A-7	0	0-10	80-90	50-70	50-70	35-60	40-50	15-25
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
207 (con.): Osobb-----	In											
	0-3	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-1, A-2, A-4	5-25	5-45	60-80	50-70	45-65	15-40	20-30	NP-10
	3-17	Extremely cobblely very fine sandy loam, very cobblely fine sandy loam, very cobblely loam	GP-GM, GM, GM-GC	A-1, A-2	5-15	30-50	25-60	20-50	15-35	5-20	20-30	NP-10
	17-18	Indurated			0	0	0	0	0	0	---	NP
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
208: Pirouette-----	0-4	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-4	5-25	25-30	65-80	65-75	55-70	35-50	20-30	NP-10
	4-11	Very cobblely clay loam	SC, CL, GC	A-6, A-7	0-5	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Theon-----	0-3	Stony sandy loam	GM-GC	A-2	1-5	10-20	55-65	45-55	35-45	20-30	20-25	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Rubble Land-----	0-60	Fragmental material	GP	A-1	30-65	30-65	0-10	0-5	0-5	0	0-14	NP
210: Biddleman-----	0-3	Gravelly sandy loam	SM	A-1, A-2	0	5-10	70-80	60-70	40-55	20-35	20-25	NP-5
	3-10	Gravelly clay loam, gravelly loam, gravelly sandy clay loam	SC, GC	A-2, A-6	0	0-5	60-75	55-65	40-55	30-45	30-35	10-15
	10-60	Stratified extremely gravelly loamy fine sand to coarse sand	GP-GM, GP	A-1	0	5-15	10-30	10-20	5-10	0-10	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
210 (con.): Biddleman-----	In											
	0-3	Very stony sandy loam	SM	A-1, A-2	5-25	5-15	70-80	60-70	40-55	20-35	---	NP
	3-10	Gravelly clay loam, gravelly loam, gravelly sandy clay loam	SC, GC	A-2, A-6	0	0-5	60-75	55-65	40-55	30-45	30-35	10-15
	10-60	Stratified extremely gravelly loamy fine sand to coarse sand	GP, GP-GM	A-1	0	5-15	10-30	10-20	5-10	0-10	---	NP
211: Biddleman-----	0-1	Gravelly sandy loam	SM	A-1, A-2	0	5-10	70-80	60-70	40-55	20-35	20-25	NP-5
	1-4	Gravelly loam	SC, GC	A-2, A-6	0	0-5	60-75	55-65	40-55	30-45	30-35	10-15
	4-60	Stratified extremely gravelly loamy fine sand to coarse sand	GP	A-1	0	5-15	10-30	10-20	5-10	0-5	0-14	NP
Trocken-----	0-3	Gravelly fine sandy loam	SM	A-1, A-2	0	0-10	65-85	50-75	40-60	20-30	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
Biddleman-----	0-3	Very stony sandy loam	SM	A-1, A-2	5-25	5-15	70-80	60-70	40-55	20-35	---	NP
	3-10	Gravelly clay loam, gravelly loam, gravelly sandy clay loam	SC, GC	A-2, A-6	0	0-5	60-75	55-65	40-55	30-45	30-35	10-15
	10-60	Stratified extremely gravelly loamy fine sand to coarse sand	GP, GP-GM	A-1	0	5-15	10-30	10-20	5-10	0-10	---	NP
213: Biddleman-----	0-3	Very stony sandy loam	SM	A-1, A-2	5-25	5-15	70-80	60-70	40-55	20-35	---	NP
	3-10	Gravelly clay loam, gravelly loam, gravelly sandy clay loam	SC, GC	A-2, A-6	0	0-5	60-75	55-65	40-55	30-45	30-35	10-15
	10-60	Stratified extremely gravelly loamy fine sand to coarse sand	GP, GP-GM	A-1	0	5-15	10-30	10-20	5-10	0-10	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
213 (con.): Troocken-----	In											
	0-3	Very gravelly sandy loam	GM, SM	A-1	0	0-10	45-65	35-50	25-40	10-20	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
214: Biddleman-----	0-3	Gravelly sandy loam	SM	A-1, A-2	0	5-10	70-80	60-70	40-55	20-35	20-25	NP-5
	3-10	Gravelly clay loam, gravelly loam, gravelly sandy clay loam	SC, GC	A-2, A-6	0	0-5	60-75	55-65	40-55	30-45	30-35	10-15
	10-60	Stratified extremely gravelly loamy fine sand to coarse sand	GP-GM, GP	A-1	0	5-15	10-30	10-20	5-10	0-10	---	NP
Troocken-----	0-3	Very gravelly sandy loam	GM, SM	A-1	0	0-10	45-65	35-50	25-40	10-20	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
Ruhe-----	0-4	Gravelly loamy sand	SM, SP-SM	A-1	0	0-10	75-90	50-75	30-50	5-25	---	NP
	4-18	Gravelly loamy sand, gravelly sand, loamy sand	SM, SP-SM	A-1	0	0-10	75-90	50-85	30-50	5-25	---	NP
	18-28	Weathered bedrock			0	0	0	0	0	0	---	NP
	28-60	Stratified extremely cobble coarse sand to sand	SP, GP	A-1	0	5-50	40-65	30-60	10-35	0-5	---	NP
215: Biddleman-----	0-3	Very stony sandy loam	SM	A-1, A-2	5-25	5-15	70-80	60-70	40-55	20-35	---	NP
	3-10	Gravelly clay loam, gravelly loam, gravelly sandy clay loam	SC, GC	A-2, A-6	0	0-5	60-75	55-65	40-55	30-45	30-35	10-15
	10-60	Stratified extremely gravelly loamy fine sand to coarse sand	GP, GP-GM	A-1	0	5-15	10-30	10-20	5-10	0-10	---	NP
Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
216: Biddleman-----	0-3	Gravelly sandy loam	SM	A-1, A-2	0	5-10	70-80	60-70	40-55	20-35	20-25	NP-5
	3-10	Gravelly clay loam, gravelly loam, gravelly sandy clay loam	SC, GC	A-2, A-6	0	0-5	60-75	55-65	40-55	30-45	30-35	10-15
	10-60	Stratified extremely gravelly loamy fine sand to coarse sand	GP-GM, GP	A-1	0	5-15	10-30	10-20	5-10	0-10	---	NP
Bluewing-----	0-5	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	20-35	---	NP
	5-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP
Trocken-----	0-3	Gravelly sandy loam	SM, GM	A-2	0	0-5	60-80	55-75	40-50	25-35	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0-10	5-40	20-60	15-40	10-35	5-25	20-30	5-10
220: Bango-----	0-2	Sandy loam	SM	A-1, A-2	0	0-5	90-95	90-95	45-60	15-30	---	NP
	2-12	Loam, clay loam, sandy clay loam	CL	A-6	0	0-5	90-100	90-100	75-90	55-75	30-35	10-15
	12-60	Stratified gravelly loamy coarse sand to silty clay loam	CL, CL-ML	A-6, A-4	0	0-5	85-95	85-95	70-85	55-70	25-35	5-15
Stumble-----	0-4	Loamy sand	SM	A-2	0	0-5	85-100	85-100	75-90	15-25	---	NP
	4-20	Loamy sand, loamy fine sand	SM	A-2	0	0-5	85-100	85-100	55-75	15-25	---	NP
	20-60	Gravelly loamy sand, gravelly loamy fine sand	SM	A-1, A-2	0	0-10	75-85	50-70	40-60	15-25	---	NP
221: Bango-----	0-4	Very gravelly loamy sand	GP-GM, GM	A-1	0	0-5	40-55	35-50	20-35	5-15	---	NP
	4-8	Loam, clay loam, sandy clay loam	CL	A-6	0	0-5	90-100	90-100	75-90	55-75	30-35	10-15
	8-60	Stratified gravelly fine sandy loam to silty clay	CL	A-6	0	0-5	85-95	85-95	70-90	55-75	25-35	10-15

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
221 (con.): Appian-----	In											
	0-6	Loam	CL-ML	A-4	0	0	95-100	90-100	75-95	55-70	20-30	5-10
	6-12	Clay loam, sandy clay loam	SC, CL	A-6, A-7	0	0	95-100	90-100	75-90	40-60	35-45	15-20
	12-16	Stratified sand to sandy loam	SM	A-2	0	0	75-100	75-90	50-65	10-25	---	NP
	16-60	Sand, coarse sand	SP, SP-SM	A-1	0	0	85-100	75-90	30-50	0-10	---	NP
222: Bango-----	0-2	Sandy loam	SM	A-1, A-2	0	0-5	90-95	90-95	45-60	15-30	---	NP
	2-12	Loam, clay loam, sandy clay loam	CL	A-6	0	0-5	90-100	90-100	75-90	55-75	30-35	10-15
	12-60	Stratified gravelly loamy coarse sand to silty clay loam	CL, CL-ML	A-6, A-4	0	0-5	85-95	85-95	70-85	55-70	25-35	5-15
Playas-----	0-6	Silty clay loam	ML	A-6, A-7	0	0	100	100	100	90-100	35-50	10-20
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH	A-7	0	0	100	100	100	90-100	45-75	20-40
Chuckles-----	0-7	Loam	ML	A-4	0	0	100	100	95-100	70-80	20-30	NP-5
	7-14	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	14-35	Silt loam, loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	35-60	Stratified very fine sandy loam to silty clay	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-100	25-40	5-15
230: Rock Outcrop.												
Uripnes-----	0-4	Very stony sandy loam	SM	A-1	15-25	5-20	75-90	30-50	25-35	10-25	20-25	NP-5
	4-21	Weathered bedrock			0	0	0	0	0	0	---	NP
	21-25	Unweathered bedrock			0	0	0	0	0	0	---	NP
Budihol-----	0-3	Stony sandy loam	SM	A-1, A-2	1-5	5-10	60-80	55-75	40-55	20-35	20-25	NP-5
	3-7	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	35-55	20-35	20-25	NP-5
	7-21	Weathered bedrock			0	0	0	0	0	0	---	NP
	21-25	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
231: Uripnes-----	0-4	Very gravelly sandy loam	SM	A-1	0-5	5-10	75-90	30-50	25-35	10-25	20-25	NP-5
	4-21	Weathered bedrock			0	0	0	0	0	0	---	NP
	21-25	Unweathered bedrock			0	0	0	0	0	0	---	NP
Budihol-----	0-3	Very gravelly sandy loam	SM	A-1	0	0-5	70-85	40-50	20-35	10-20	20-25	NP-5
	3-7	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	35-55	20-35	20-25	NP-5
	7-21	Weathered bedrock			0	0	0	0	0	0	---	NP
	21-25	Unweathered bedrock			0	0	0	0	0	0	---	NP
Chill-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-95	55-75	40-55	20-35	---	NP
	4-8	Gravelly sandy clay loam	SC	A-2	0	0	90-100	50-75	40-60	25-35	35-45	15-20
	8-22	Weathered bedrock			0	0	0	0	0	0	---	NP
232: Rock Outcrop.												
Uripnes-----	0-4	Very stony sandy loam	SM	A-1	15-25	5-20	75-90	30-50	25-35	10-25	20-25	NP-5
	4-21	Weathered bedrock			0	0	0	0	0	0	---	NP
	21-25	Unweathered bedrock			0	0	0	0	0	0	---	NP
240: Watoopah-----	0-2	Gravelly loamy sand	SM	A-1, A-2	0	0	70-100	55-75	35-60	10-30	---	NP
	2-16	Sandy loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0	70-100	60-100	40-80	20-50	15-25	NP-5
	16-29	Gravelly loamy sand, gravelly sandy loam, sandy loam	SM	A-1, A-2, A-4	0	0-5	60-100	50-95	30-70	20-50	---	NP
	29-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1	0	0-5	60-85	50-75	30-50	5-25	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
240 (con.): Genegraf-----	In											
	0-6	Gravelly sandy loam	SM	A-1, A-2	0	0-5	60-80	55-70	30-45	20-35	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0-1	0-10	45-65	35-55	25-50	10-25	0-14	NP
Buckaroo-----	0-4	Stony fine sandy loam	GM, SM	A-2, A-4	1-5	5-10	60-85	50-75	40-70	25-45	15-25	NP-5
	4-16	Clay, clay loam	CL, CH	A-7	0	0-5	90-100	85-100	75-90	65-80	40-55	15-30
	16-60	Very gravelly sandy loam	GM	A-1	0-2	0-15	45-60	30-45	20-35	10-25	15-25	NP-5
241: Watoopah-----	0-2	Sand	SM	A-2	0	0	90-100	90-100	50-80	10-30	---	NP
	2-16	Sandy loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0	70-100	60-100	40-80	20-50	15-25	NP-5
	16-29	Gravelly loamy sand, gravelly sandy loam, sandy loam	SM	A-1, A-2, A-4	0	0-5	60-100	50-95	30-70	20-50	---	NP
	29-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1	0	0-5	60-85	50-75	30-50	5-25	---	NP
Buckaroo-----	0-4	Very gravelly very fine sandy loam	GM	A-1, A-2	0-1	0-5	45-60	30-45	25-40	15-30	15-25	NP-5
	4-16	Clay, clay loam	CL, CH	A-7	0	0-5	90-100	85-100	75-90	65-80	40-55	15-30
	16-60	Very gravelly sandy loam	GM	A-1	0-2	0-15	45-60	30-45	20-35	10-25	15-25	NP-5
Wholan-----	0-6	Very fine sandy loam	ML	A-4	0	0	100	100	95-100	70-80	15-25	NP-5
	6-45	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	75-90	20-30	NP-5
	45-60	Stratified very gravelly loam to very gravelly sand	GP-GM, GM	A-1	0	0-10	35-45	30-40	15-25	5-20	15-25	NP-5
250: Rock Outcrop.												
Rezave-----	0-3	Very gravelly clay loam	GC	A-2	0	5-10	50-65	35-50	30-45	20-35	35-45	15-25
	3-15	Gravelly clay, clay	CL, CH	A-7	0	0-5	75-85	60-85	55-70	50-60	45-60	25-35
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
250 (con.): Singatse-----	0-4	Very gravelly loam	SM	A-2	0	0-10	70-80	45-55	35-45	25-35	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
260: Appian-----	0-6	Sandy loam	SM	A-2, A-4	0	0	95-100	90-100	50-65	25-40	15-25	NP-5
	6-12	Clay loam, sandy clay loam	SC, CL	A-6, A-7	0	0	95-100	90-100	75-90	40-60	35-45	15-20
	12-16	Stratified sand to sandy loam	SM	A-2	0	0	75-100	75-90	50-65	10-25	---	NP
	16-60	Sand, coarse sand	SP, SP-SM	A-1	0	0	85-100	75-90	30-50	0-10	---	NP
Playas-----	0-6	Silty clay loam	ML	A-6, A-7	0	0	100	100	100	90-100	35-50	10-20
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH	A-7	0	0	100	100	100	90-100	45-75	20-40
261: Appian-----	0-6	Loamy sand	SM	A-2	0	0	95-100	90-100	50-65	15-30	---	NP
	6-12	Clay loam, sandy clay loam	SC, CL	A-6, A-7	0	0	95-100	90-100	75-90	40-60	35-45	15-20
	12-16	Stratified sand to sandy loam	SM	A-2	0	0	75-100	75-90	50-65	10-25	---	NP
	16-60	Sand, coarse sand	SP, SP-SM	A-1	0	0	85-100	75-90	30-50	0-10	---	NP
262: Appian-----	0-6	Sandy loam	SM	A-2, A-4	0	0	95-100	90-100	50-65	25-40	15-25	NP-5
	6-12	Clay loam, sandy clay loam	SC, CL	A-6, A-7	0	0	95-100	90-100	75-90	40-60	35-45	15-20
	12-16	Stratified sand to sandy loam	SM	A-2	0	0	75-100	75-90	50-65	10-25	---	NP
	16-60	Sand, coarse sand	SP, SP-SM	A-1	0	0	85-100	75-90	30-50	0-10	---	NP
Juva-----	0-6	Loam	CL-ML	A-4	0	0-5	90-100	90-100	80-90	60-80	20-30	5-10
	6-60	Stratified gravelly sand to silt loam	SM	A-2, A-1	0	0-5	90-100	75-95	45-60	20-35	20-35	NP-5
Bango-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0-5	75-85	70-80	40-60	20-35	---	NP
	4-8	Loam, clay loam	CL	A-6	0	0-5	90-100	90-100	75-90	55-75	30-35	10-15
	8-60	Stratified gravelly fine sandy loam to silty clay loam	CL	A-6	0	0-5	85-95	85-95	70-90	55-75	25-35	10-15



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
270: Fubble-----	In											
	0-4	Very stony loam	SC-SM	A-4	5-15	5-10	75-85	65-75	55-70	35-50	20-25	5-10
	4-14	Gravelly clay loam, gravelly loam	SC	A-6, A-7	0	0-10	70-80	55-75	45-60	35-50	35-45	15-20
	14-19	Gravelly loam	SC	A-2, A-6	0	0-10	70-80	55-75	40-55	30-45	25-35	10-15
	19-29	Unweathered bedrock			0	0	0	0	0	0	---	NP
Nicanor-----	0-2	Stony loam	SC-SM	A-2, A-4	1-5	5-10	75-90	55-80	45-60	30-45	25-30	5-10
	2-5	Gravelly clay loam, gravelly loam	SC, CL	A-6	0	0	75-90	50-75	45-70	40-55	30-40	10-15
	5-25	Weathered bedrock			0	0	0	0	0	0	---	NP
	25-29	Unweathered bedrock			0	0	0	0	0	0	---	NP
280: Trocken-----	0-9	Very fine sandy loam	ML	A-4	0	0	95-100	90-95	80-95	50-65	---	NP
	9-26	Very gravelly loam	GM-GC, SC-SM	A-2, A-4	0	0	60-75	40-50	35-50	25-40	25-30	5-10
	26-43	Stratified very gravelly very fine sandy loam to coarse sand	SM	A-1, A-2	0	0	75-90	40-50	30-45	20-30	---	NP
	43-60	Gravelly loamy coarse sand	SM	A-1, A-2	0	0-10	75-85	55-70	30-55	10-25	---	NP
Chuckles-----	0-7	Loam	ML	A-4	0	0	100	100	95-100	70-80	20-30	NP-5
	7-14	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	14-35	Silt loam, loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	35-60	Stratified very fine sandy loam to silty clay	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-100	25-40	5-15
281: Trocken-----	0-3	Very fine sandy loam	ML	A-4	0	0-5	95-100	85-100	75-100	50-70	15-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0-2	5-20	20-60	15-50	10-35	5-25	20-30	5-10
Ragtown-----	0-6	Loam	ML, CL-ML	A-4	0	0	95-100	95-100	85-95	60-75	25-35	5-10
	6-23	Stratified sandy clay loam to silty clay loam	CL	A-6, A-7	0	0	100	100	80-95	50-75	35-45	15-20
	23-60	Stratified silty clay loam to clay	CL, CH, MH	A-7	0	0	100	100	90-100	75-95	40-55	20-25

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
283: Troocken-----	0-3	Gravelly sandy loam	SM, GM	A-2	0	0-5	60-80	55-75	40-50	25-35	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0-10	5-40	20-60	15-40	10-35	5-25	20-30	5-10
Bluewing-----	0-7	Very gravelly loamy sand	GP-GM	A-1	0	0-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	10-25	30-40	25-35	15-25	5-10	---	NP
284: Troocken-----	0-3	Very gravelly sandy loam	GM, SM	A-1	0	0-10	45-65	35-50	25-40	10-20	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
290: Huxley-----	0-2	Gravelly clay loam	GC, CL	A-2, A-6	0	0-5	60-80	50-75	45-70	30-60	30-40	10-20
	2-10	Very gravelly clay loam, very gravelly clay	GC	A-2, A-7	0	0-10	25-55	25-50	25-45	15-40	50-60	25-35
	10-60	Stratified very fine sand to coarse sand	SM	A-2	0	0	100	100	70-80	15-30	0-14	NP
300: Rock Outcrop.												
Old Camp-----	0-3	Very stony loam	GM, GM-GC	A-2, A-4	5-25	20-30	60-70	55-65	45-55	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Colbar-----	0-6	Cobbly loam	CL-ML	A-4	0	35-45	90-100	85-95	75-85	50-60	20-30	5-10
	6-16	Cobbly loam, gravelly clay loam, cobbly clay loam	CL	A-6	0	10-35	90-95	70-85	60-80	50-65	30-40	10-20
	16-21	Gravelly loam, cobbly loam	SC-SM, CL-ML	A-4	0	5-30	75-95	60-90	55-75	35-55	20-30	5-10
	21-31	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
301: Old Camp-----	0-3	Extremely stony loam	GM, GM-GC	A-2, A-4	25-50	10-20	60-70	55-65	50-60	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Mirkwood-----	0-2	Extremely stony loam	GM-GC, GM	A-2, A-1	25-40	10-30	40-60	25-40	20-35	15-25	15-25	NP-10
	2-11	Very gravelly loam, very gravelly clay loam	GC, SC	A-2	0-5	5-15	60-75	40-55	30-50	25-35	35-45	15-20
	11-21	Unweathered bedrock			0	0	0	0	0	0	---	NP
Nemico-----	0-3	Very stony sandy loam	SM	A-2	5-25	5-25	85-95	65-85	50-65	15-35	---	NP
	3-12	Gravelly clay, gravelly clay loam	SC, CL, CH	A-7	0	0-5	70-80	55-75	50-65	40-55	45-60	20-30
	12-15	Gravelly loam	SM, GM	A-4	0	0-5	65-90	55-70	45-60	35-45	25-30	NP-5
	15-16	Indurated			0	0	0	0	0	0	---	NP
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
302: Rock Outcrop.												
Old Camp-----	0-3	Very stony loam	GM, GM-GC	A-2, A-4	5-25	20-30	60-70	55-65	45-55	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very gravelly loam	SM	A-2	0	0-10	70-80	45-55	35-45	25-35	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
304: Old Camp-----	0-3	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Bombadil-----	0-2	Stony loam	SM	A-4	1-5	10-20	75-80	60-75	50-65	35-50	15-25	NP-5
	2-6	Loam, gravelly loam	CL-ML, CL	A-4, A-6	0-5	0-10	75-100	70-90	65-85	50-70	25-35	5-15
	6-10	Loam, clay loam, gravelly clay loam	CL	A-6	0-5	0-10	75-100	70-90	65-85	55-75	30-40	10-20
	10-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Loomer-----	0-7	Gravelly loam	GM-GC, GC, CL-ML, CL	A-4, A-6	0	5-10	65-80	55-75	45-65	35-55	25-35	5-15
	7-17	Extremely cobbly clay, extremely gravelly clay, extremely cobbly clay loam	GC	A-2	0-5	30-55	30-45	20-35	15-30	15-25	40-55	20-35
	17-21	Unweathered bedrock			0	0	0	0	0	0	---	NP
305: Rock Outcrop.												
Old Camp-----	0-3	Very cobbly loam	GM, GM-GC	A-2, A-4	0-5	25-50	60-70	55-65	45-55	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Colbar-----	0-6	Very cobbly loam	CL-ML	A-4	0-5	50-60	90-100	85-95	75-85	50-60	20-30	5-10
	6-16	Cobbly loam, gravelly clay loam, cobbly clay loam	CL	A-6	0	10-35	90-95	70-85	60-80	50-65	30-40	10-20
	16-21	Gravelly loam, cobbly loam	SC-SM, CL-ML	A-4	0	5-30	75-95	60-90	55-75	35-55	20-30	5-10
	21-31	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
307: Rock Outcrop.												
Old Camp-----	0-3	Very stony loam	GM, GM-GC	A-2, A-4	5-25	20-30	60-70	55-65	45-55	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Theon-----	0-3	Very stony fine sandy loam	GM-GC, SC-SM	A-2, A-4	5-25	10-30	55-80	45-75	35-50	20-45	20-30	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
308: Old Camp-----	0-3	Extremely stony loam	GM, GM-GC	A-2, A-4	25-50	10-20	60-70	55-65	50-60	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Clan Alpine-----	0-10	Very gravelly loam	GM-GC	A-2, A-4	0-5	5-25	60-70	50-60	35-45	30-40	25-30	5-10
	10-39	Very cobbly loam, very cobbly clay loam, very gravelly clay loam	GC	A-2, A-6	0-10	15-35	50-70	35-60	25-50	20-40	30-40	10-20
	39-43	Weathered bedrock			0	0	0	0	0	0	---	NP
Colbar-----	0-6	Cobbly loam	CL-ML	A-4	0	35-45	90-100	85-95	75-85	50-60	20-30	5-10
	6-16	Cobbly loam, gravelly clay loam, cobbly clay loam	CL	A-6	0	10-35	90-95	70-85	60-80	50-65	30-40	10-20
	16-21	Gravelly loam, cobbly loam	SC-SM, CL-ML	A-4	0	5-30	75-95	60-90	55-75	35-55	20-30	5-10
	21-31	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
309: Old Camp-----	In											
	0-3	Very stony loam	GM, GM-GC	A-2, A-4	5-25	20-30	60-70	55-65	45-55	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Pickup-----	0-10	Very stony loam	GC, GM-GC	A-2	15-25	10-20	55-65	40-55	30-45	20-35	25-35	5-15
	10-36	Very gravelly clay	GC	A-2, A-7	0-5	10-25	50-65	35-50	30-50	25-45	45-60	20-30
	36-40	Unweathered bedrock			0	0	0	0	0	0	---	NP
Loomer-----	0-7	Gravelly loam	GM-GC, GC, CL-ML, CL	A-4, A-6	0	5-10	65-80	55-75	45-65	35-55	25-35	5-15
	7-17	Extremely cobbly clay, extremely gravelly clay, extremely cobbly clay loam	GC	A-2	0-5	30-55	30-45	20-35	15-30	15-25	40-55	20-35
	17-21	Unweathered bedrock			0	0	0	0	0	0	---	NP
310: Rednik-----	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
310 (con.): Troeken-----	In											
	0-3	Gravelly fine sandy loam	SM	A-1, A-2	0	0-10	65-85	50-75	40-60	20-30	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
Bluewing-----	0-7	Stony loamy sand	GP-GM	A-1	1-5	5-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly coarse sand to extremely gravelly loamy sand	GP-GM	A-1	0-15	15-25	30-40	25-35	15-25	5-10	---	NP
311: Rednik-----	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP
Troeken-----	0-3	Gravelly fine sandy loam	SM	A-1, A-2	0	0-10	65-85	50-75	40-60	20-30	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
311 (con.): Genegraf-----	In											
	0-6	Very gravelly sandy loam	SM, GM	A-1	0	0-5	45-65	30-50	20-35	15-25	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0	0-10	45-60	35-50	25-45	10-25	15-25	NP-5
313: Rednik-----	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP
Ricert-----	0-8	Gravelly loam	SC-SM	A-4, A-2	0	0	65-80	55-70	35-50	30-45	20-30	5-10
	8-18	Loam, clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-90	70-80	35-45	15-20
	18-26	Loam, silt loam, clay loam	CL	A-6	0	0-5	85-100	80-95	60-75	50-70	30-40	10-15
	26-60	Very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GM, GP-GM	A-1	0	0-15	30-60	20-50	15-35	5-25	0-14	NP



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
313 (con.): Trocken-----	In											
	0-3	Gravelly very fine sandy loam	GM, SM	A-2, A-4	0	0-15	65-85	60-75	50-70	30-50	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10
315: Rednik-----	0-5	Very gravelly fine sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP
Genegrafi-----	0-6	Very gravelly sandy loam	SM, GM	A-1	0	0-5	45-65	30-50	20-35	15-25	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0	0-10	45-60	35-50	25-45	10-25	15-25	NP-5
Barnmot-----	0-2	Very gravelly clay	GC, GM	A-2, A-7	0	0-10	50-60	30-50	25-45	20-40	45-55	20-25
	2-60	Clay, clay loam	CH, MH	A-7	0	0	90-100	90-100	80-95	70-85	50-60	20-30

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
316: Rednik-----	In											
	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP
Rednik-----	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
317: Rednik-----	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP
Cleaver-----	0-4	Gravelly loam	SM, SC-SM, ML, CL-ML	A-4	0	0-5	70-85	60-75	55-70	35-60	15-30	NP-10
	4-12	Gravelly clay loam, gravelly loam	SC, CL	A-6, A-7	0	0-5	75-85	50-75	45-70	40-60	35-50	15-25
	12-60	Indurated			0	0	0	0	0	0	---	NP
Trocken-----	0-3	Very gravelly sandy loam	GM, SM	A-1	0	0-10	45-65	35-50	25-40	10-20	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
320: Rock Outcrop.												
Jung-----	0-7	Very gravelly loam	GM	A-1, A-2	0	0-10	50-60	35-50	25-45	20-35	20-25	NP-5
	7-15	Very cobbly clay loam, very cobbly clay, very gravelly clay loam	GC	A-7	0	15-40	55-65	50-60	40-50	35-45	40-55	20-30
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
320 (con.): Old Camp-----	0-3	Very stony loam	GM, GM-GC	A-2, A-4	5-25	20-30	60-70	55-65	45-55	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
321: Jung-----	0-7	Very gravelly loam	GM	A-1, A-2	0	0-10	50-60	35-50	25-45	20-35	20-25	NP-5
	7-15	Very cobbly clay loam, very cobbly clay, very gravelly clay loam	GC	A-7	0	15-40	55-65	50-60	40-50	35-45	40-55	20-30
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP
Desatoya-----	0-6	Very gravelly loam	GM-GC	A-2	0	0-10	50-60	40-50	35-45	25-35	20-30	5-10
	6-15	Gravelly clay loam, gravelly clay	GC	A-7	0	0-5	65-75	55-70	50-60	40-50	40-50	20-30
	15-60	Stratified extremely gravelly sandy loam to very gravelly loamy sand	GM	A-1	0	25-35	35-50	25-45	15-30	10-15	15-25	NP-5
Roca-----	0-6	Very stony loam	CL	A-6	5-25	25-55	85-100	75-85	70-80	50-60	25-35	10-15
	6-25	Very gravelly clay loam, very gravelly clay	GC, SC	A-2	0	0-10	60-75	30-50	25-45	20-35	45-60	20-30
	25-29	Unweathered bedrock			0	0	0	0	0	0	---	NP
322: Jung-----	0-7	Very gravelly loam	GM	A-1, A-2	0	0-10	50-60	35-50	25-45	20-35	20-25	NP-5
	7-15	Very cobbly clay loam, very cobbly clay, very gravelly clay loam	GC	A-7	0	15-40	55-65	50-60	40-50	35-45	40-55	20-30
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
322 (con.): Puett-----	In											
	0-3	Fine sandy loam	SM	A-4	0	0	90-100	85-95	60-80	35-50	---	NP
	3-11	Coarse sandy loam, fine sandy loam, sandy loam	SM, ML	A-1, A-2, A-4	0	0	80-100	75-95	40-80	15-55	---	NP
	11-20	Weathered bedrock			0	0	0	0	0	0	---	NP
Buffaran-----	0-7	Gravelly loam	SC, CL	A-6	0-1	5-15	75-90	70-80	50-75	40-60	25-35	10-15
	7-15	Gravelly clay loam, gravelly clay, clay	CL, CH	A-7	0	0-5	75-90	70-85	65-80	50-65	40-55	20-30
	15-60	Indurated			0	0	0	0	0	0	---	NP
324: Jung-----	0-7	Very gravelly loam	GM	A-1, A-2	0	0-10	50-60	35-50	25-45	20-35	20-25	NP-5
	7-15	Very cobbly clay loam, very cobbly clay, very gravelly clay loam	GC	A-7	0	15-40	55-65	50-60	40-50	35-45	40-55	20-30
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP
Clan Alpine-----	0-10	Very gravelly loam	GM-GC	A-2, A-4	0-5	5-25	60-70	50-60	35-45	30-40	25-30	5-10
	10-39	Very cobbly loam, very cobbly clay loam, very gravelly clay loam	GC	A-2, A-6	0-10	15-35	50-70	35-60	25-50	20-40	30-40	10-20
	39-43	Weathered bedrock			0	0	0	0	0	0	---	NP
Colbar-----	0-6	Cobbly loam	CL-ML	A-4	0	35-45	90-100	85-95	75-85	50-60	20-30	5-10
	6-16	Cobbly loam, gravelly clay loam, cobbly clay loam	CL	A-6	0	10-35	90-95	70-85	60-80	50-65	30-40	10-20
	16-21	Gravelly loam, cobbly loam	SC-SM, CL-ML	A-4	0	5-30	75-95	60-90	55-75	35-55	20-30	5-10
	21-31	Unweathered bedrock			0	0	0	0	0	0	---	NP
325: Jung-----	0-7	Very gravelly loam	GM	A-1, A-2	0	0-10	50-60	35-50	25-45	20-35	20-25	NP-5
	7-15	Very cobbly clay loam, very cobbly clay, very gravelly clay loam	GC	A-7	0	15-40	55-65	50-60	40-50	35-45	40-55	20-30
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
325 (con.): Old Camp-----	0-3	Very stony loam	GM, GM-GC	A-2, A-4	5-25	20-30	60-70	55-65	45-55	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Clanalpine-----	0-10	Very gravelly loam	GM-GC	A-2, A-4	0-5	5-25	60-70	50-60	35-45	30-40	25-30	5-10
	10-39	Very cobbly loam, very cobbly clay loam, very gravelly clay loam	GC	A-2, A-6	0-10	15-35	50-70	35-60	25-50	20-40	30-40	10-20
	39-43	Weathered bedrock			0	0	0	0	0	0	---	NP
330: Settlement-----	0-4	Silty clay	CL, CH	A-7	0	0	100	95-100	95-100	85-95	45-60	20-30
	4-12	Clay, silty clay	CH, CL	A-7	0	0-5	95-100	85-100	80-100	70-95	45-60	20-30
	12-60	Clay, silty clay	CH, CL	A-7	0	0-5	95-100	85-100	80-100	70-95	45-60	20-30
Louderback-----	0-4	Sand	SP-SM, SM	A-2, A-3	0	0	100	100	50-60	5-15	0-14	NP
	4-31	Sand	SP-SM, SM	A-2, A-3	0	0	100	100	50-60	5-15	0-14	NP
	31-60	Stratified sand to loam	SM	A-2	0	0	90-100	85-100	65-80	25-35	0-14	NP
Rustigate-----	0-10	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	75-85	25-35	5-10
	10-33	Loam, sandy loam	CL-ML, ML	A-4	0	0	100	100	85-95	50-75	25-35	5-10
	33-60	Loam, sandy loam	CL-ML, ML, SM, SC-SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-10
331: Settlement-----	0-4	Silty clay loam	CL	A-7	0	0	100	95-100	95-100	85-95	40-45	15-20
	4-12	Clay, silty clay	CH, CL	A-7	0	0-5	95-100	85-100	80-100	70-95	45-60	20-30
	12-60	Clay, silty clay	CH, CL	A-7	0	0-5	95-100	85-100	80-100	70-95	45-60	20-30
Chuckles-----	0-7	Loam	ML	A-4	0	0	100	100	95-100	70-80	20-30	NP-5
	7-14	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	14-35	Silt loam, loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	35-60	Stratified very fine sandy loam to silty clay	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-100	25-40	5-15
Rustigate-----	0-10	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	75-85	25-35	5-10
	10-33	Loam, sandy loam	CL-ML, ML	A-4	0	0	100	100	85-95	50-75	25-35	5-10
	33-60	Loam, sandy loam	CL-ML, ML, SM, SC-SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-10

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
340: Slaw-----	In											
	0-9	Silt loam	CL-ML	A-4	0	0	100	100	95-100	80-90	15-25	5-10
	9-60	Stratified very fine sandy loam to silty clay	ML, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	10-20
Juva-----	0-6	Loam	CL-ML	A-4	0	0-5	90-100	90-100	80-90	60-80	20-30	5-10
	6-60	Stratified gravelly sand to silt loam	SM	A-2, A-1	0	0-5	90-100	75-95	45-60	20-35	20-35	NP-5
Wholan-----	0-7	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	7-60	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	75-90	20-30	NP-5
341: Slaw-----	0-9	Silt loam	CL-ML	A-4	0	0	100	100	95-100	80-90	15-25	5-10
	9-60	Stratified very fine sandy loam to silty clay	ML, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	10-20
Chuckles-----	0-7	Loam	ML	A-4	0	0	100	100	95-100	70-80	20-30	NP-5
	7-14	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	14-35	Silt loam, loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	35-60	Stratified very fine sandy loam to silty clay	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-100	25-40	5-15
342: Slaw-----	0-9	Silt loam	CL-ML	A-4	0	0	100	100	95-100	80-90	15-25	5-10
	9-60	Stratified very fine sandy loam to silty clay	ML, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	10-20
Mazuma-----	0-5	Silt loam	ML	A-4	0	0	100	100	90-100	70-80	20-25	NP-5
	5-25	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	100	90-100	30-50	20-25	NP-5
	25-60	Stratified silt loam to gravelly coarse sand	SM, ML	A-2, A-4	0	0	75-100	70-85	50-75	25-55	20-25	NP-5

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
342 (con.): Hessing-----	In											
	0-7	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	7-13	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-20
	13-20	Very fine sandy loam, silt loam	CL-ML	A-4	0	0	95-100	95-100	85-95	60-70	25-30	5-10
	20-27	Gravelly loam, gravelly sandy loam	GM, SM	A-4	0	0	60-80	50-75	45-55	35-50	25-30	NP-5
	27-60	Stratified very gravelly loamy coarse sand to extremely gravelly sand	GP-GM, GW-GM	A-1	0	0	35-45	20-35	10-20	5-10	0-14	NP
343: Slaw-----	0-9	Silt loam	CL-ML	A-4	0	0	100	100	95-100	80-90	15-25	5-10
	9-60	Stratified very fine sandy loam to silty clay	ML, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	10-20
Trocken-----	0-9	Very gravelly loam	GM-GC, SC-SM	A-2, A-4	0	0	60-75	40-50	35-50	25-40	25-30	5-10
	9-26	Very gravelly loam	GM-GC, SC-SM	A-2, A-4	0	0	60-75	40-50	35-50	25-40	25-30	5-10
	26-43	Stratified very gravelly very fine sandy loam to coarse sand	SM	A-1, A-2	0	0	75-90	40-50	30-45	20-30	---	NP
	43-60	Gravelly loamy coarse sand	SM	A-1, A-2	0	0-10	75-85	55-70	30-55	10-25	---	NP
Chuckles-----	0-7	Loam	ML	A-4	0	0	100	100	95-100	70-80	20-30	NP-5
	7-14	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	14-35	Silt loam, loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	35-60	Stratified very fine sandy loam to silty clay	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-100	25-40	5-15
344: Slaw-----	0-9	Silt loam	CL-ML	A-4	0	0	100	100	95-100	80-90	15-25	5-10
	9-60	Stratified very fine sandy loam to silty clay	ML, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	10-20
Ragtown-----	0-6	Fine sandy loam	SM, ML	A-4	0	0	90-95	85-95	70-80	35-55	20-25	NP-5
	6-23	Stratified sandy clay loam to silty clay loam	CL	A-6, A-7	0	0	100	100	80-95	50-75	35-45	15-20
	23-60	Stratified silty clay loam to clay	CL, CH, MH	A-7	0	0	100	100	90-100	75-95	40-55	20-25



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
350: Ricert-----	In											
	0-8	Gravelly loam	SC-SM	A-4, A-2	0	0	65-80	55-70	35-50	30-45	20-30	5-10
	8-18	Loam, clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-90	70-80	35-45	15-20
	18-26	Loam, silt loam, clay loam	CL	A-6	0	0-5	85-100	80-95	60-75	50-70	30-40	10-15
	26-60	Very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GM, GP-GM	A-1	0	0-15	30-60	20-50	15-35	5-25	0-14	NP
Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
351: Ricert-----	0-8	Gravelly loam	SC-SM	A-4, A-2	0	0	65-80	55-70	35-50	30-45	20-30	5-10
	8-18	Loam, clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-90	70-80	35-45	15-20
	18-26	Loam, silt loam, clay loam	CL	A-6	0	0-5	85-100	80-95	60-75	50-70	30-40	10-15
	26-60	Very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GM, GP-GM	A-1	0	0-15	30-60	20-50	15-35	5-25	0-14	NP
Chilper-----	0-2	Gravelly very fine sandy loam	GM, SM	A-4	0-1	5-10	60-80	55-75	50-70	35-50	0-14	NP
	2-5	Very fine sandy loam	ML	A-4	0	0-5	80-100	75-100	70-90	50-70	0-14	NP
	5-25	Clay loam, clay	CL, CH	A-7	0	0	80-100	75-100	65-80	50-70	40-55	15-30
	25-60	Extremely gravelly sandy loam	GP, GP-GM, GM	A-1	0	0-10	15-35	10-25	5-20	0-15	0-14	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
351 (con.): Pineval-----	In											
	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
352: Ricert-----	0-5	Very gravelly loam	GM-GC	A-2	0-5	0-10	50-60	40-50	35-50	25-35	20-30	5-10
	5-14	Loam, clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-90	70-80	35-45	15-20
	14-20	Loam, silt loam, clay loam	CL	A-6	0	0-5	85-100	80-95	60-75	50-70	30-40	10-15
	20-60	Very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GM, GP-GM	A-1	0	0-15	30-60	20-50	15-35	5-25	0-14	NP
Desatoya-----	0-6	Very gravelly loam	GM-GC	A-2	0	0-10	50-60	40-50	35-45	25-35	20-30	5-10
	6-15	Gravelly clay loam, gravelly clay	GC	A-7	0	0-5	65-75	55-70	50-60	40-50	40-50	20-30
	15-60	Stratified extremely gravelly sandy loam to very gravelly loamy sand	GM	A-1	0	25-35	35-50	25-45	15-30	10-15	15-25	NP-5
Pineval-----	0-5	Very cobbly loam	SC-SM, GM-GC	A-4	0	30-40	65-80	55-70	45-60	35-50	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0-5	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0	30-60	20-50	15-40	5-20	0-14	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
353: Ricert-----	In											
	0-8	Gravelly loam	SC-SM	A-4, A-2	0	0	65-80	55-70	35-50	30-45	20-30	5-10
	8-18	Loam, clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-90	70-80	35-45	15-20
	18-26	Loam, silt loam, clay loam	CL	A-6	0	0-5	85-100	80-95	60-75	50-70	30-40	10-15
	26-60	Very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GM, GP-GM	A-1	0	0-15	30-60	20-50	15-35	5-25	0-14	NP
Trocken-----	0-3	Gravelly sandy loam	SM, GM	A-2	0	0-5	60-80	55-75	40-50	25-35	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0-10	5-40	20-60	15-40	10-35	5-25	20-30	5-10
Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
358: Ricert-----	0-8	Gravelly loam	SC-SM	A-4, A-2	0	0	65-80	55-70	35-50	30-45	20-30	5-10
	8-18	Loam, clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-90	70-80	35-45	15-20
	18-26	Loam, silt loam, clay loam	CL	A-6	0	0-5	85-100	80-95	60-75	50-70	30-40	10-15
	26-60	Very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GM, GP-GM	A-1	0	0-15	30-60	20-50	15-35	5-25	0-14	NP
Desatoya-----	0-6	Very gravelly loam	GM-GC	A-2	0	0-10	50-60	40-50	35-45	25-35	20-30	5-10
	6-15	Gravelly clay loam, gravelly clay	GC	A-7	0	0-5	65-75	55-70	50-60	40-50	40-50	20-30
	15-60	Stratified extremely gravelly sandy loam to very gravelly loamy sand	GM	A-1	0	25-35	35-50	25-45	15-30	10-15	15-25	NP-5

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
358 (con.): Troocken-----	In											
	0-3	Gravelly very fine sandy loam	GM, SM	A-2, A-4	0	0-15	65-85	60-75	50-70	30-50	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10
359: Ricert-----	0-5	Very gravelly loam	GM-GC	A-2	0-5	0-10	50-60	40-50	35-50	25-35	20-30	5-10
	5-14	Loam, clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-90	70-80	35-45	15-20
	14-20	Loam, silt loam, clay loam	CL	A-6	0	0-5	85-100	80-95	60-75	50-70	30-40	10-15
	20-60	Very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GM, GP-GM	A-1	0	0-15	30-60	20-50	15-35	5-25	0-14	NP
Celeton-----	0-2	Very gravelly loam	GM	A-1, A-2	0	0-5	50-65	25-40	20-35	20-30	40-50	NP-5
	2-7	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	7-14	Weathered bedrock			0	0	0	0	0	0	---	NP
Troocken-----	0-3	Gravelly fine sandy loam	SM	A-1, A-2	0	0-10	65-85	50-75	40-60	20-30	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
360: Ricert-----	0-8	Gravelly loam	SC-SM	A-4, A-2	0	0	65-80	55-70	35-50	30-45	20-30	5-10
	8-18	Loam, clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-90	70-80	35-45	15-20
	18-26	Loam, silt loam, clay loam	CL	A-6	0	0-5	85-100	80-95	60-75	50-70	30-40	10-15
	26-60	Very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GM, GP-GM	A-1	0	0-15	30-60	20-50	15-35	5-25	0-14	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
360 (con.): Trodden-----	In											
	0-3	Gravelly very fine sandy loam	GM, SM	A-2, A-4	0	0-15	65-85	60-75	50-70	30-50	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10
Rebel-----	0-11	Loam	ML	A-4	0	0	95-100	90-100	80-95	50-65	20-25	NP-5
	11-60	Fine sandy loam, sandy loam, loam	CL-ML, ML	A-4	0	0	100	85-95	70-80	50-60	20-30	NP-10
370: Duco-----	0-4	Stony loam	SC-SM, GM-GC, CL-ML	A-4	1-5	5-10	60-80	55-75	45-65	35-55	20-30	5-10
	4-11	Very gravelly clay loam, extremely stony clay loam, very cobbly sandy clay loam	GC	A-2	5-30	10-55	35-60	30-55	20-35	15-30	35-40	15-20
	11-15	Unweathered bedrock			0	0	0	0	0	0	---	NP
Clan Alpine-----	0-10	Very gravelly loam	GM-GC	A-2, A-4	0-5	5-25	60-70	50-60	35-45	30-40	25-30	5-10
	10-39	Very cobbly loam, very cobbly clay loam, very gravelly clay loam	GC	A-2, A-6	0-10	15-35	50-70	35-60	25-50	20-40	30-40	10-20
	39-43	Weathered bedrock			0	0	0	0	0	0	---	NP
Jung-----	0-7	Very gravelly loam	GM	A-1, A-2	0	0-10	50-60	35-50	25-45	20-35	20-25	NP-5
	7-15	Very cobbly clay loam, very cobbly clay, very gravelly clay loam	GC	A-7	0	15-40	55-65	50-60	40-50	35-45	40-55	20-30
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In				Pct	Pct					Pct	
371: Duco-----	0-4	Stony loam	SC-SM, GM-GC, CL-ML	A-4	1-5	5-10	60-80	55-75	45-65	35-55	20-30	5-10
	4-11	Very gravelly clay loam, extremely stony clay loam, very cobbly sandy clay loam	GC	A-2	5-30	10-55	35-60	30-55	20-35	15-30	35-40	15-20
	11-15	Unweathered bedrock			0	0	0	0	0	0	---	NP
Clanalpine-----	0-10	Very gravelly loam	GM-GC	A-2, A-4	0-5	5-25	60-70	50-60	35-45	30-40	25-30	5-10
	10-39	Very cobbly loam, very cobbly clay loam, very gravelly clay loam	GC	A-2, A-6	0-10	15-35	50-70	35-60	25-50	20-40	30-40	10-20
	39-43	Weathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-3	Very stony loam	GM, GM-GC	A-2, A-4	5-25	20-30	60-70	55-65	45-55	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
373: Duco-----	0-4	Stony loam	SC-SM, GM-GC, CL-ML	A-4	1-5	5-10	60-80	55-75	45-65	35-55	20-30	5-10
	4-11	Very gravelly clay loam, extremely stony clay loam, very cobbly sandy clay loam	GC	A-2	5-30	10-55	35-60	30-55	20-35	15-30	35-40	15-20
	11-15	Unweathered bedrock			0	0	0	0	0	0	---	NP
Itca-----	0-4	Stony loam	CL, CL-ML	A-4, A-6	1-5	15-30	70-90	65-85	60-70	50-60	25-35	5-15
	4-16	Very cobbly clay loam, very gravelly clay, extremely gravelly clay	CL, GC	A-7, A-2	1-5	0-55	40-80	30-75	25-70	20-60	40-50	15-25
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
373 (con.): Puett-----	In											
	0-3	Fine sandy loam	SM	A-4	0	0	90-100	85-95	60-80	35-50	---	NP
	3-11	Coarse sandy loam, fine sandy loam, sandy loam	SM, ML	A-1, A-2, A-4	0	0	80-100	75-95	40-80	15-55	---	NP
	11-20	Weathered bedrock			0	0	0	0	0	0	---	NP
380: Rock Outcrop.												
Itca-----	0-4	Stony loam	CL, CL-ML, GC, GM-GC	A-4, A-6	1-5	5-15	65-90	60-85	55-70	45-60	25-35	5-15
	4-16	Very cobbly clay loam, very gravelly clay, extremely gravelly clay	CL, GC	A-7, A-2	0-5	0-55	40-80	30-75	25-70	20-60	40-50	15-25
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Clan Alpine-----	0-10	Very gravelly loam	GM-GC	A-2, A-4	0-5	5-25	60-70	50-60	35-45	30-40	25-30	5-10
	10-39	Very cobbly loam, very cobbly clay loam, very gravelly clay loam	GC	A-2, A-6	0-10	15-35	50-70	35-60	25-50	20-40	30-40	10-20
	39-43	Weathered bedrock			0	0	0	0	0	0	---	NP
381: Itca-----	0-4	Very stony loam	GC, GM-GC	A-4, A-6	5-25	15-30	60-75	50-65	45-60	35-50	25-35	5-15
	4-16	Very cobbly clay loam, very gravelly clay, extremely gravelly clay	CL, GC	A-7, A-2	0-5	0-55	40-80	30-75	25-70	20-60	40-50	15-25
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Reluctan-----	0-9	Very gravelly loam	GM-GC	A-2, A-4	0	10-25	35-65	30-55	25-55	20-40	25-30	5-10
	9-25	Gravelly clay loam, gravelly loam	GC, CL	A-6, A-7	0	0-15	65-85	60-75	55-75	40-60	35-45	15-20
	25-29	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
381 (con.): Walti-----	In											
	0-4	Very cobbly loam	CL-ML, ML	A-4	1-5	30-40	75-90	65-80	55-70	50-60	20-30	NP-10
	4-10	Clay loam, gravelly clay loam	CL	A-6	0	0-10	90-100	65-90	60-80	50-65	35-40	15-20
	10-22	Clay, gravelly clay	CH, MH	A-7	0	0-10	90-100	65-90	60-80	50-75	55-65	25-35
	22-26	Unweathered bedrock			0	0	0	0	0	0	---	NP
390: Defler-----	0-7	Gravelly fine sandy loam	GM, SM	A-2, A-4, A-1	0	0-5	55-80	50-75	40-60	20-40	15-25	NP-5
	7-44	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	GM	A-1, A-2	0	0-10	30-55	25-50	15-40	10-30	15-25	NP-5
	44-60	Stratified very gravelly sandy loam to extremely gravelly coarse sand	GP-GM, GM	A-1	0	0-10	25-40	20-35	10-20	5-15	---	NP
Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
391: Defler-----	0-7	Gravelly fine sandy loam	GM, SM	A-2, A-4, A-1	0	0-5	55-80	50-75	40-60	20-40	15-25	NP-5
	7-44	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	GM	A-1, A-2	0	0-10	30-55	25-50	15-40	10-30	15-25	NP-5
	44-60	Stratified very gravelly sandy loam to extremely gravelly coarse sand	GP-GM, GM	A-1	0	0-10	25-40	20-35	10-20	5-15	---	NP



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
391 (con.): Troocken-----	0-3	Gravelly very fine sandy loam	GM, SM	A-2, A-4	0	0-15	65-85	60-75	50-70	30-50	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10
400: Chuckles-----	0-7	Loam	ML	A-4	0	0	100	100	95-100	70-80	20-30	NP-5
	7-14	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	14-35	Silt loam, loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	35-60	Stratified very fine sandy loam to silty clay	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-100	25-40	5-15
Playas-----	0-6	Silty clay loam	ML	A-6, A-7	0	0	100	100	100	90-100	35-50	10-20
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH	A-7	0	0	100	100	100	90-100	45-75	20-40
401: Chuckles-----	0-7	Loam	ML	A-4	0	0	100	100	95-100	70-80	20-30	NP-5
	7-14	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	14-35	Silt loam, loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	35-60	Stratified very fine sandy loam to silty clay	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-100	25-40	5-15
Bango-----	0-2	Loamy sand	SM	A-1, A-2	0	0-5	90-95	90-95	45-60	15-30	---	NP
	2-12	Loam, clay loam, sandy clay loam	CL	A-6	0	0-5	90-100	90-100	75-90	55-75	30-35	10-15
	12-60	Stratified gravelly loamy coarse sand to silty clay loam	CL, CL-ML	A-6, A-4	0	0-5	85-95	85-95	70-85	55-70	25-35	5-15
402: Chuckles-----	0-7	Loam	ML	A-4	0	0	100	100	95-100	70-80	20-30	NP-5
	7-14	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	14-35	Silt loam, loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-100	25-35	5-10
	35-60	Stratified very fine sandy loam to silty clay	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-100	25-40	5-15
Playas-----	0-6	Silty clay loam	ML	A-6, A-7	0	0	100	100	100	90-100	35-50	10-20
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH	A-7	0	0	100	100	100	90-100	45-75	20-40

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
402 (con.): Slaw-----	0-9 9-60	Silt loam Stratified very fine sandy loam to silty clay	CL-ML ML, CL	A-4 A-6, A-7	0 0	0 0	100 100	100 100	95-100 95-100	80-90 85-95	15-25 35-45	5-10 10-20
404: Chuckles-----	0-7 7-14 14-35 35-60	Loam Silt loam Silt loam, loam Stratified very fine sandy loam to silty clay	ML CL-ML, ML CL-ML, ML CL, CL-ML	A-4 A-4 A-4 A-6, A-4	0 0 0 0	0 0 0 0	100 100 100 100	100 100 100 100	95-100 95-100 95-100 95-100	70-80 80-100 80-100 80-100	20-30 25-35 25-35 25-40	NP-5 5-10 5-10 5-15
Settlement-----	0-4 4-12 12-60	Silty clay Clay, silty clay Clay, silty clay	CL, CH CH, CL CH, CL	A-7 A-7 A-7	0 0 0	0 0-5 0-5	100 95-100 95-100	95-100 85-100 85-100	95-100 80-100 80-100	85-95 70-95 70-95	45-60 45-60 45-60	20-30 20-30 20-30
Rebel-----	0-11 11-60	Loam Fine sandy loam, sandy loam, loam	ML CL-ML, ML	A-4 A-4	0 0	0 0	95-100 100	90-100 85-95	80-95 70-80	50-65 50-60	20-25 20-30	NP-5 NP-10
410: Buffaran-----	0-7 7-15 15-60	Gravelly loam Gravelly clay loam, gravelly clay, clay Indurated	SC, CL CL, CH	A-6 A-7	0-1 0	5-15 0-5	75-90 75-90	70-80 70-85	50-75 65-80	40-60 50-65	25-35 40-55	10-15 20-30
Desatoya-----	0-6 6-15 15-60	Very gravelly loam Gravelly clay loam, gravelly clay Stratified extremely gravelly sandy loam to very gravelly loamy sand	GM-GC GC GM	A-2 A-7 A-1	0 0 0	0-10 0-5 25-35	50-60 65-75 35-50	40-50 55-70 25-45	35-45 50-60 15-30	25-35 40-50 10-15	20-30 40-50 15-25	5-10 20-30 NP-5
411: Buffaran-----	0-7 7-15 15-60	Gravelly loam Gravelly clay loam, gravelly clay, clay Indurated	SC, CL CL, CH	A-6 A-7	0-1 0	5-15 0-5	75-90 75-90	70-80 70-85	50-75 65-80	40-60 50-65	25-35 40-55	10-15 20-30
Rebel-----	0-11 11-60	Loam Fine sandy loam, sandy loam, loam	ML CL-ML, ML	A-4 A-4	0 0	0 0	95-100 100	90-100 85-95	80-95 70-80	50-65 50-60	20-25 20-30	NP-5 NP-10

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
411 (con.): Puett-----	In											
	0-3	Fine sandy loam	SM	A-4	0	0	90-100	85-95	60-80	35-50	---	NP
	3-11	Coarse sandy loam, fine sandy loam, sandy loam	SM, ML	A-1, A-2, A-4	0	0	80-100	75-95	40-80	15-55	---	NP
	11-20	Weathered bedrock			0	0	0	0	0	0	---	NP
420: Trocken-----	0-3	Gravelly very fine sandy loam	GM, SM	A-2, A-4	0	0-15	65-85	60-75	50-70	30-50	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10
Hessing-----	0-7	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	7-13	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-20
	13-20	Very fine sandy loam, silt loam	CL-ML	A-4	0	0	95-100	95-100	85-95	60-70	25-30	5-10
	20-27	Gravelly loam, gravelly sandy loam	GM, SM	A-4	0	0	60-80	50-75	45-55	35-50	25-30	NP-5
	27-60	Stratified very gravelly loamy coarse sand to extremely gravelly sand	GP-GM, GW-GM	A-1	0	0	35-45	20-35	10-20	5-10	0-14	NP
Dun Glen-----	0-5	Loam	ML	A-4	0	0	95-100	90-100	65-80	55-70	15-25	NP-5
	5-12	Silt loam, very fine sandy loam	ML	A-4	0	0	95-100	90-100	85-100	55-70	15-25	NP-5
	12-60	Fine sandy loam, very fine sandy loam, loam	SM, ML	A-4	0	0	90-100	85-100	70-85	35-55	15-25	NP-5
422: Trocken-----	0-3	Gravelly very fine sandy loam	GM, SM	A-2, A-4	0	0-15	65-85	60-75	50-70	30-50	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In										Pct	
422 (con.): Hessing-----	0-7	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	7-13	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-20
	13-20	Very fine sandy loam, silt loam	CL-ML	A-4	0	0	95-100	95-100	85-95	60-70	25-30	5-10
	20-27	Gravelly loam, gravelly sandy loam	GM, SM	A-4	0	0	60-80	50-75	45-55	35-50	25-30	NP-5
	27-60	Stratified very gravelly loamy coarse sand to extremely gravelly sand	GP-GM, GW-GM	A-1	0	0	35-45	20-35	10-20	5-10	0-14	NP
Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
423: Trocken-----	0-3	Very gravelly sandy loam	GM, SM	A-1	0	0-10	45-65	35-50	25-40	10-20	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
Bluewing-----	0-7	Very gravelly loamy sand	GP-GM	A-1	1-5	5-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly coarse sand to extremely gravelly loamy sand	GP-GM	A-1	0-15	15-25	30-40	25-35	15-25	5-10	---	NP
Trocken-----	0-9	Very fine sandy loam	ML	A-4	0	0	95-100	90-95	80-95	50-65	---	NP
	9-26	Very gravelly loam	GM-GC, SC-SM	A-2, A-4	0	0	60-75	40-50	35-50	25-40	25-30	5-10
	26-43	Stratified very gravelly very fine sandy loam to coarse sand	SM	A-1, A-2	0	0	75-90	40-50	30-45	20-30	---	NP
	43-60	Gravelly loamy coarse sand	SM	A-1, A-2	0	0-10	75-85	55-70	30-55	10-25	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
425: Trocken-----	In											
	0-3	Gravelly very fine sandy loam	GM, SM	A-2, A-4	0	0-15	65-85	60-75	50-70	30-50	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10
Hessing-----	0-7	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	7-13	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-20
	13-20	Very fine sandy loam, silt loam	CL-ML	A-4	0	0	95-100	95-100	85-95	60-70	25-30	5-10
	20-27	Gravelly loam, gravelly sandy loam	GM, SM	A-4	0	0	60-80	50-75	45-55	35-50	25-30	NP-5
	27-60	Stratified very gravelly loamy coarse sand to extremely gravelly sand	GP-GM, GW-GM	A-1	0	0	35-45	20-35	10-20	5-10	0-14	NP
Defler-----	0-7	Gravelly fine sandy loam	GM, SM	A-2, A-4, A-1	0	0-5	55-80	50-75	40-60	20-40	15-25	NP-5
	7-44	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	GM	A-1, A-2	0	0-10	30-55	25-50	15-40	10-30	15-25	NP-5
	44-60	Stratified very gravelly sandy loam to extremely gravelly coarse sand	GP-GM, GM	A-1	0	0-10	25-40	20-35	10-20	5-15	---	NP
430: Rock Outcrop.												
Kram-----	0-5	Very gravelly very fine sandy loam	GM	A-1, A-2	0	10-15	50-60	35-50	30-50	20-30	15-25	NP-5
	5-14	Very gravelly loam, very gravelly very fine sandy loam, extremely gravelly loam	GM	A-1, A-2	0	0-15	25-60	15-55	15-45	10-30	15-25	NP-5
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
430 (con.): Attella-----	In											
	0-3	Very gravelly loam	GM	A-1, A-2	0-1	5-15	35-55	30-50	25-40	20-35	25-35	NP-10
	3-7	Very gravelly loam, very gravelly silt loam	GC, GM-GC	A-2	0-1	5-15	35-55	30-50	25-40	20-35	25-40	5-15
	7-11	Unweathered bedrock			0	0	0	0	0	0	---	NP
432: Rock Outcrop.												
Kram-----	0-5	Very gravelly very fine sandy loam	GM	A-1, A-2	0	10-15	50-60	35-50	30-50	20-30	15-25	NP-5
	5-14	Very gravelly loam, very gravelly very fine sandy loam, extremely gravelly loam	GM	A-1, A-2	0	0-15	25-60	15-55	15-45	10-30	15-25	NP-5
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Findout-----	0-3	Very gravelly loam	SM, GM	A-1, A-2	0-1	5-10	55-70	40-55	25-35	20-30	20-25	NP-5
	3-8	Very gravelly clay loam, very gravelly loam	GC	A-2	0-1	0-5	45-60	35-50	25-40	20-35	30-40	10-15
	8-14	Very gravelly loam	GM-GC	A-2	0-1	0-5	45-60	35-55	25-40	20-35	25-30	5-10
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
433: Rock Outcrop.												
Kram-----	0-5	Very gravelly very fine sandy loam	GM	A-1, A-2	0	10-15	50-60	35-50	30-50	20-30	15-25	NP-5
	5-14	Very gravelly loam, very gravelly very fine sandy loam, extremely gravelly loam	GM	A-1, A-2	0	0-15	25-60	15-55	15-45	10-30	15-25	NP-5
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Hopeka-----	0-9	Very gravelly loam	GC	A-2	0	0-15	40-55	25-50	25-45	20-35	25-35	10-15
	9-13	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
440: Ravenswood-----	In											
	0-8	Stony loam	CL-ML	A-4	1-5	15-25	80-100	75-100	60-80	50-70	25-30	5-10
	8-12	Very gravelly clay loam	GC	A-2	0-5	5-15	45-60	35-50	30-45	20-35	40-50	15-25
	12-23	Very gravelly clay, very gravelly clay loam	GC	A-2, A-7	0-5	5-15	45-60	35-50	30-45	25-40	40-55	20-30
	23-27	Unweathered bedrock			0	0	0	0	0	0	---	NP
Itca-----	0-4	Stony loam	CL, CL-ML, GC, GM-GC	A-4, A-6	1-5	5-15	65-90	60-85	55-70	45-60	25-35	5-15
	4-16	Very cobbly clay loam, very gravelly clay, extremely gravelly clay	CL, GC	A-7, A-2	0-5	0-55	40-80	30-75	25-70	20-60	40-50	15-25
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Walti-----	0-4	Cobbly loam	CL-ML	A-4	0	25-40	70-85	65-80	55-70	50-60	20-30	5-10
	4-10	Clay loam, gravelly clay loam	CL	A-6	0	0-10	90-100	65-90	60-80	50-65	35-40	15-20
	10-22	Clay, gravelly clay	CH, MH	A-7	0	0-10	90-100	65-90	60-80	50-75	55-65	25-35
	22-26	Unweathered bedrock			0	0	0	0	0	0	---	NP
450: Wholan-----	0-7	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	7-60	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	75-90	20-30	NP-5
Wholan-----	0-6	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	6-45	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	75-90	20-30	NP-5
	45-60	Stratified very gravelly loam to very gravelly sand	GP-GM, GM	A-1	0	0-10	35-45	30-40	15-25	5-20	15-25	NP-5
Defler-----	0-7	Gravelly fine sandy loam	GM, SM	A-2, A-4, A-1	0	0-5	55-80	50-75	40-60	20-40	15-25	NP-5
	7-44	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	GM	A-1, A-2	0	0-10	30-55	25-50	15-40	10-30	15-25	NP-5
	44-60	Stratified very gravelly sandy loam to extremely gravelly coarse sand	GP-GM, GM	A-1	0	0-10	25-40	20-35	10-20	5-15	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
460:												
Juva-----	0-6	Loam	CL-ML	A-4	0	0-5	90-100	90-100	80-90	60-80	20-30	5-10
	6-60	Stratified gravelly sand to silt loam	SM	A-2, A-1	0	0-5	90-100	75-95	45-60	20-35	20-35	NP-5
Wholan-----	0-7	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	7-60	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	75-90	20-30	NP-5
Stumble-----	0-4	Loamy sand	SM	A-2	0	0-5	85-100	85-100	75-90	15-25	---	NP
	4-20	Loamy sand, loamy fine sand	SM	A-2	0	0-5	85-100	85-100	55-75	15-25	---	NP
	20-60	Gravelly loamy sand, gravelly loamy fine sand	SM	A-1, A-2	0	0-10	75-85	50-70	40-60	15-25	---	NP
470:												
Hessing-----	0-7	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	7-13	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-20
	13-20	Very fine sandy loam, silt loam	CL-ML	A-4	0	0	95-100	95-100	85-95	60-70	25-30	5-10
	20-27	Gravelly loam, gravelly sandy loam	GM, SM	A-4	0	0	60-80	50-75	45-55	35-50	25-30	NP-5
	27-60	Stratified very gravelly loamy coarse sand to extremely gravelly sand	GP-GM, GW-GM	A-1	0	0	35-45	20-35	10-20	5-10	0-14	NP
Wholan-----	0-7	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	7-60	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	75-90	20-30	NP-5
Dun Glen-----	0-5	Loam	ML	A-4	0	0	95-100	90-100	65-80	55-70	15-25	NP-5
	5-12	Silt loam, very fine sandy loam	ML	A-4	0	0	95-100	90-100	85-100	55-70	15-25	NP-5
	12-60	Fine sandy loam, very fine sandy loam, loam	SM, ML	A-4	0	0	90-100	85-100	70-85	35-55	15-25	NP-5



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
471: Hessing-----	0-7	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	7-13	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-20
	13-20	Very fine sandy loam, silt loam	CL-ML	A-4	0	0	95-100	95-100	85-95	60-70	25-30	5-10
	20-27	Gravelly loam, gravelly sandy loam	GM, SM	A-4	0	0	60-80	50-75	45-55	35-50	25-30	NP-5
	27-60	Stratified very gravelly loamy coarse sand to extremely gravelly sand	GP-GM, GW-GM	A-1	0	0	35-45	20-35	10-20	5-10	0-14	NP
Dun Glen-----	0-5	Loam	ML	A-4	0	0	95-100	90-100	65-80	55-70	15-25	NP-5
	5-12	Silt loam, very fine sandy loam	ML	A-4	0	0	95-100	90-100	85-100	55-70	15-25	NP-5
	12-60	Fine sandy loam, very fine sandy loam, loam	SM, ML	A-4	0	0	90-100	85-100	70-85	35-55	15-25	NP-5
Bango-----	0-2	Sandy loam	SM	A-1, A-2	0	0-5	90-95	90-95	45-60	15-30	---	NP
	2-12	Loam, clay loam, sandy clay loam	CL	A-6	0	0-5	90-100	90-100	75-90	55-75	30-35	10-15
	12-60	Stratified gravelly loamy coarse sand to silty clay loam	CL, CL-ML	A-6, A-4	0	0-5	85-95	85-95	70-85	55-70	25-35	5-15
480: Yody-----	0-7	Gravelly sandy loam	SM	A-1	0	0-5	70-80	65-75	40-50	20-25	---	NP
	7-16	Gravelly sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	75-85	65-75	55-65	35-50	30-40	10-20
	16-30	Gravelly loam, gravelly sandy loam, gravelly loamy sand	SM, GM	A-1, A-2	0	0-5	60-70	50-60	35-50	20-35	20-25	NP-5
	30-60	Cemented			0	0	0	0	0	0	---	NP
Buffaran-----	0-7	Gravelly loam	SC, CL	A-6	0-1	5-15	75-90	70-80	50-75	40-60	25-35	10-15
	7-15	Gravelly clay loam, gravelly clay, clay	CL, CH	A-7	0	0-5	75-90	70-85	65-80	50-65	40-55	20-30
	15-60	Indurated			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
480 (con.): Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
481: Yody-----	0-7	Gravelly sandy loam	SM	A-1	0	0-5	70-80	65-75	40-50	20-25	---	NP
	7-16	Gravelly sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	75-85	65-75	55-65	35-50	30-40	10-20
	16-30	Gravelly loam, gravelly sandy loam, gravelly loamy sand	SM, GM	A-1, A-2	0	0-5	60-70	50-60	35-50	20-35	20-25	NP-5
	30-60	Cemented			0	0	0	0	0	0	---	NP
Ricert-----	0-8	Gravelly sandy loam	SM, SC-SM	A-2, A-4	0	0	65-80	50-75	40-60	25-40	20-30	NP-10
	8-18	Loam, clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-90	70-80	35-45	15-20
	18-26	Loam, silt loam, clay loam	CL	A-6	0	0-5	85-100	80-95	60-75	50-70	30-40	10-15
	26-60	Very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GM, GP-GM	A-1	0	0-15	30-60	20-50	15-35	5-25	0-14	NP
Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
484: Yody-----	0-7	Gravelly sandy loam	SM	A-1	0	0-5	70-80	65-75	40-50	20-25	---	NP
	7-16	Gravelly sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	75-85	65-75	55-65	35-50	30-40	10-20
	16-30	Gravelly loam, gravelly sandy loam, gravelly loamy sand	SM, GM	A-1, A-2	0	0-5	60-70	50-60	35-50	20-35	20-25	NP-5
	30-60	Cemented			0	0	0	0	0	0	---	NP
Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
491: Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
Rebel-----	0-11	Loam	ML	A-4	0	0	95-100	90-100	80-95	50-65	20-25	NP-5
	11-60	Fine sandy loam, sandy loam, loam	CL-ML, ML	A-4	0	0	100	85-95	70-80	50-60	20-30	NP-10
Wholan-----	0-6	Very fine sandy loam	ML	A-4	0	0	100	100	95-100	70-80	15-25	NP-5
	6-45	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	75-90	20-30	NP-5
	45-60	Stratified very gravelly loam to very gravelly sand	GP-GM, GM	A-1	0	0-10	35-45	30-40	15-25	5-20	15-25	NP-5

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
492: Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
Rebel-----	0-11	Loam	ML	A-4	0	0	95-100	90-100	80-95	50-65	20-25	NP-5
	11-60	Fine sandy loam, sandy loam, loam	CL-ML, ML	A-4	0	0	100	85-95	70-80	50-60	20-30	NP-10
494: Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
Buckaroo-----	0-4	Extremely stony sandy loam	GM	A-1, A-2	25-40	0-5	50-65	35-50	30-45	15-30	15-25	NP-5
	4-16	Clay, clay loam	CL, CH	A-7	0-5	0-5	90-100	85-100	75-90	65-80	40-55	15-30
	16-60	Very gravelly sandy loam	GM	A-1	0-5	0-15	45-60	30-45	20-35	10-25	15-25	NP-5
Rebel-----	0-11	Loam	ML	A-4	0	0	95-100	90-100	80-95	50-65	20-25	NP-5
	11-60	Fine sandy loam, sandy loam, loam	CL-ML, ML	A-4	0	0	100	85-95	70-80	50-60	20-30	NP-10
500: Louderback-----	0-4	Sand	SP-SM, SM	A-2, A-3	0	0	100	100	50-60	5-15	0-14	NP
	4-31	Sand	SP-SM, SM	A-2, A-3	0	0	100	100	50-60	5-15	0-14	NP
	31-60	Stratified sand to loam	SM	A-2	0	0	90-100	85-100	65-80	25-35	0-14	NP
Rustigate-----	0-10	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	75-85	25-35	5-10
	10-33	Loam, sandy loam	CL-ML, ML	A-4	0	0	100	100	85-95	50-75	25-35	5-10
	33-60	Loam, sandy loam	CL-ML, ML, SM, SC-SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-10
Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
511: Grumblen-----	0-4	Very gravelly loam	GM-GC	A-2	0	0-15	40-55	35-50	30-45	20-35	25-30	5-10
	4-18	Very gravelly clay, very gravelly clay loam	GC, GM	A-2, A-7	0	0-15	35-55	30-50	25-45	15-40	40-55	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
Pickup-----	0-10	Very gravelly loam	GM-GC	A-2	0	5-25	45-65	35-55	25-45	15-35	25-30	5-10
	10-36	Very gravelly clay	GC	A-2, A-7	0	10-25	50-65	35-50	30-50	25-45	45-60	20-30
	36-40	Unweathered bedrock			0	0	0	0	0	0	---	NP
520: Pineval-----	0-5	Very cobbly loam	SC-SM, GM-GC	A-4	0	30-40	65-80	55-70	45-60	35-50	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0-5	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0	30-60	20-50	15-40	5-20	0-14	NP
Bluewing-----	0-7	Very gravelly loamy sand	GP-GM	A-1	0	0-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	10-25	30-40	25-35	15-25	5-10	---	NP
Inmo-----	0-8	Gravelly loamy sand	SM	A-1	0	0-5	85-95	60-75	35-50	15-20	---	NP
	8-40	Stratified extremely gravelly coarse sand to very gravelly loamy sand	SP, SP-SM	A-1	0	0-5	75-85	20-35	10-25	0-10	---	NP
	40-60	Very gravelly loamy coarse sand	SM	A-1	0	0-5	80-90	40-55	25-40	10-15	---	NP
530: Cleaver-----	0-4	Gravelly loam	SM, SC-SM, ML, CL-ML	A-4	0	0-5	70-85	60-75	55-70	35-60	15-30	NP-10
	4-12	Gravelly clay loam, gravelly loam	SC, CL	A-6, A-7	0	0-5	75-85	50-75	45-70	40-60	35-50	15-25
	12-60	Indurated			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
530 (con.): Troeken-----	0-3	Gravelly fine sandy loam	SM	A-1, A-2	0	0-10	65-85	50-75	40-60	20-30	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
Bluewing-----	0-7	Very gravelly loamy sand	GP-GM	A-1	0	0-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	10-25	30-40	25-35	15-25	5-10	---	NP
532: Cleaver-----	0-4	Gravelly loam	SM, SC-SM, ML, CL-ML	A-4	0	0-5	70-85	60-75	55-70	35-60	15-30	NP-10
	4-12	Gravelly clay loam, gravelly loam	SC, CL	A-6, A-7	0	0-5	75-85	50-75	45-70	40-60	35-50	15-25
	12-60	Indurated			0	0	0	0	0	0	---	NP
Ricert-----	0-8	Gravelly loam	SC-SM	A-4, A-2	0	0	65-80	55-70	35-50	30-45	20-30	5-10
	8-18	Loam, clay loam	CL	A-6, A-7	0	0	90-100	85-100	80-90	70-80	35-45	15-20
	18-26	Loam, silt loam, clay loam	CL	A-6	0	0-5	85-100	80-95	60-75	50-70	30-40	10-15
	26-60	Very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GM, GP-GM	A-1	0	0-15	30-60	20-50	15-35	5-25	0-14	NP
Barnmot-----	0-2	Very gravelly clay	GC, GM	A-2, A-7	0	0-10	50-60	30-50	25-45	20-40	45-55	20-25
	2-60	Clay, clay loam	CH, MH	A-7	0	0	90-100	90-100	80-95	70-85	50-60	20-30
533: Cleaver-----	0-4	Gravelly loam	SM, SC-SM, ML, CL-ML	A-4	0	0-5	70-85	60-75	55-70	35-60	15-30	NP-10
	4-12	Gravelly clay loam, gravelly loam	SC, CL	A-6, A-7	0	0-5	75-85	50-75	45-70	40-60	35-50	15-25
	12-60	Indurated			0	0	0	0	0	0	---	NP
Buffaran-----	0-7	Gravelly loam	SC, CL	A-6	0-1	5-15	75-90	70-80	50-75	40-60	25-35	10-15
	7-15	Gravelly clay loam, gravelly clay, clay	CL, CH	A-7	0	0-5	75-90	70-85	65-80	50-65	40-55	20-30
	15-60	Indurated			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
535: Cleaver-----	In											
	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0-5	70-85	60-75	35-50	20-35	---	NP
	4-12	Gravelly clay loam, gravelly loam	SC, CL	A-6, A-7	0	0-5	75-85	50-75	45-70	40-60	35-50	15-25
	12-60	Indurated			0	0	0	0	0	0	---	NP
Bundorf-----	0-2	Very stony loam	GM-GC, GC	A-2	10-15	10-15	50-60	40-55	30-40	25-35	20-35	5-15
	2-11	Clay loam, clay	CL, CH	A-7	0	0	90-100	90-100	85-95	65-85	45-60	20-35
	11-14	Very gravelly clay, very gravelly clay loam	GC	A-2	0-5	10-30	50-60	35-45	30-40	25-35	45-60	20-35
	14-45	Indurated			0	0	0	0	0	0	---	NP
536: Cleaver-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0-5	70-85	60-75	35-50	20-35	---	NP
	4-12	Gravelly clay loam, gravelly loam	SC, CL	A-6, A-7	0	0-5	75-85	50-75	45-70	40-60	35-50	15-25
	12-60	Indurated			0	0	0	0	0	0	---	NP
Rednik-----	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP
537: Cleaver-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0-5	70-85	60-75	35-50	20-35	---	NP
	4-12	Gravelly clay loam, gravelly loam	SC, CL	A-6, A-7	0	0-5	75-85	50-75	45-70	40-60	35-50	15-25
	12-60	Indurated			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
537 (con.): Otomo-----	In											
	0-3	Gravelly sandy loam	SM, GM	A-1, A-2	0	0-10	55-75	50-70	30-45	15-30	15-25	NP-5
	3-12	Very gravelly sandy loam	GM	A-1	0	0-10	35-55	30-50	15-30	10-20	15-25	NP-5
	12-22	Indurated			0	0	0	0	0	0	---	NP
	22-60	Extremely gravelly loamy sand, extremely gravelly sandy loam, very gravelly loamy sand	GP-GM, GP	A-1	0	0-15	15-55	10-50	5-20	0-10	---	NP
538: Cleaver-----	0-4	Very gravelly sandy loam	GM	A-1	0-5	0-10	35-50	25-40	20-30	10-20	---	NP
	4-12	Gravelly clay loam, gravelly loam	SC, CL	A-6, A-7	0	0-5	75-85	50-75	45-70	40-60	35-50	15-25
	12-60	Indurated			0	0	0	0	0	0	---	NP
Genegra-----	0-6	Gravelly very fine sandy loam	SM, GM	A-4	0	0-5	60-80	55-70	45-60	35-50	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0-1	0-10	45-65	35-55	25-50	10-25	0-14	NP
Roic-----	0-1	Very gravelly fine sandy loam	GM	A-1, A-2	0	0-5	40-60	30-50	20-40	15-30	20-25	NP-5
	1-6	Very fine sandy loam, fine sandy loam, loam	CL-ML, SC-SM, ML, SM	A-4	0	0	90-100	80-100	70-90	35-70	20-30	NP-10
	6-10	Weathered bedrock			0	0	0	0	0	0	---	NP
540: Doughide-----	0-7	Very stony loam	GC	A-2	5-25	0-10	35-50	30-45	25-45	20-35	25-35	10-15
	7-15	Very cobbly clay loam, very cobbly clay	CL, CH	A-7	0-10	45-55	70-90	70-85	60-80	50-70	40-55	20-30
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
540 (con.): Itca-----	0-4	Stony loam	CL, CL-ML, GC, GM-GC	A-4, A-6	1-5	5-15	65-90	60-85	55-70	45-60	25-35	5-15
	4-16	Very cobbly clay loam, very gravelly clay, extremely gravelly clay	CL, GC	A-7, A-2	0-5	0-55	40-80	30-75	25-70	20-60	40-50	15-25
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Ravenswood-----	0-8	Stony loam	CL-ML	A-4	1-5	15-25	80-100	75-100	60-80	50-70	25-30	5-10
	8-12	Very gravelly clay loam	GC	A-2	0-5	5-15	45-60	35-50	30-45	20-35	40-50	15-25
	12-23	Very gravelly clay, very gravelly clay loam	GC	A-2, A-7	0-5	5-15	45-60	35-50	30-45	25-40	40-55	20-30
	23-27	Unweathered bedrock			0	0	0	0	0	0	---	NP
551: Yerington-----	0-3	Loamy fine sand	SM	A-2	0	0	100	95-100	70-85	15-30	---	NP
	3-60	Stratified loamy coarse sand to very fine sandy loam	SM	A-2	0	0-5	80-100	75-100	50-75	15-25	---	NP
560: Rock Outcrop.												
Izod-----	0-4	Extremely cobbly loam	SC-SM, SM, GM-GC, GM	A-2	0	40-50	55-70	25-40	20-40	15-35	25-35	5-10
	4-8	Very gravelly loam, extremely gravelly loam	GM-GC, GM	A-2	0	0-25	20-55	15-50	15-45	10-35	25-35	5-10
	8-12	Unweathered bedrock			0	0	0	0	0	0	---	NP
572: Rawe-----	0-1	Gravelly sandy loam	SM	A-1, A-2	0	0	70-90	60-75	45-60	20-35	15-25	NP-5
	1-10	Gravelly clay, clay	SC, CL	A-7	0	0	75-95	60-90	40-65	35-60	40-50	15-25
	10-60	Stratified very gravelly sandy loam to extremely gravelly coarse sandy loam	GP, GP-GM, GM	A-1	0	0	45-60	10-50	5-35	0-20	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
572 (con.): Malpais-----	In											
	0-3	Gravelly sandy loam	SM	A-1	0	0-10	70-85	60-75	35-50	15-25	15-25	NP-5
	3-15	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM	A-1, A-2	0-5	5-35	50-60	35-50	30-45	20-35	20-25	NP-5
	15-60	Extremely cobbly loam, very cobbly loam, extremely cobbly sandy loam	GM	A-1, A-2	0-5	40-50	40-55	35-50	25-35	20-30	20-25	NP-5
580: Welch-----	0-24	Loam	CL-ML	A-4	0	0	95-100	95-100	85-95	60-70	25-30	5-10
	24-60	Stratified sandy loam to silty clay loam	CL	A-6	0	0	80-100	75-100	65-90	50-70	30-40	10-20
590: Rebel-----	0-11	Loam	ML	A-4	0	0	95-100	90-100	80-95	50-65	20-25	NP-5
	11-60	Fine sandy loam, sandy loam, loam	CL-ML, ML	A-4	0	0	100	85-95	70-80	50-60	20-30	NP-10
Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
Yody-----	0-7	Gravelly sandy loam	SM	A-1	0	0-5	70-80	65-75	40-50	20-25	---	NP
	7-16	Gravelly sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	75-85	65-75	55-65	35-50	30-40	10-20
	16-30	Gravelly loam, gravelly sandy loam, gravelly loamy sand	SM, GM	A-1, A-2	0	0-5	60-70	50-60	35-50	20-35	20-25	NP-5
	30-60	Cemented			0	0	0	0	0	0	---	NP
591: Rebel-----	0-11	Loam	ML	A-4	0	0	95-100	90-100	80-95	50-65	20-25	NP-5
	11-60	Fine sandy loam, sandy loam, loam	CL-ML, ML	A-4	0	0	100	85-95	70-80	50-60	20-30	NP-10

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
592: Rebel-----	0-11	Loam	ML	A-4	0	0	95-100	90-100	80-95	50-65	20-25	NP-5
	11-60	Fine sandy loam, sandy loam, loam	CL-ML, ML	A-4	0	0	100	85-95	70-80	50-60	20-30	NP-10
Wholan-----	0-6	Very fine sandy loam	ML	A-4	0	0	100	100	95-100	70-80	15-25	NP-5
	6-45	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	75-90	20-30	NP-5
	45-60	Stratified very gravelly loam to very gravelly sand	GP-GM, GM	A-1	0	0-10	35-45	30-40	15-25	5-20	15-25	NP-5
Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
600: Hooten-----	0-1	Very gravelly sand	SP, SP-SM	A-1	0	0	55-70	25-50	10-25	0-10	0-14	NP
	1-6	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC, SC	A-2, A-6	0	0	55-70	35-50	20-50	15-40	30-40	10-20
	6-12	Cemented			0	0	0	0	0	0	---	NP
	12-19	Stratified sand to extremely gravelly coarse sand	SP	A-1	0	0	60-80	50-70	30-40	0-5	0-14	NP
	19-60	Stratified sandy loam to silt loam	ML	A-4	0	0	100	90-100	70-80	50-60	0-14	NP
Bango-----	0-2	Sandy loam	SM	A-1, A-2	0	0-5	90-95	90-95	45-60	15-30	---	NP
	2-12	Loam, clay loam, sandy clay loam	CL	A-6	0	0-5	90-100	90-100	75-90	55-75	30-35	10-15
	12-60	Stratified gravelly loamy coarse sand to silty clay loam	CL, CL-ML	A-6, A-4	0	0-5	85-95	85-95	70-85	55-70	25-35	5-15
Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
610: Barnmot-----	In											
	0-2	Very gravelly clay	GC, GM	A-2, A-7	0	0-10	50-60	30-50	25-45	20-40	45-55	20-25
	2-60	Clay, clay loam	CH, MH	A-7	0	0	90-100	90-100	80-95	70-85	50-60	20-30
Bluewing-----	0-7	Very gravelly loamy sand	GP-GM	A-1	1-5	5-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly coarse sand to extremely gravelly loamy sand	GP-GM	A-1	0-15	15-25	30-40	25-35	15-25	5-10	---	NP
Badland-----	0-6	Variable	CL, CH, MH, ML	A-7	0	0	100	100	100	90-100	45-75	20-35
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH, ML	A-7	0	0	100	100	100	90-100	45-75	20-35
620: Findout-----	0-3	Very gravelly loam	SM, GM	A-1, A-2	0-1	5-10	55-70	40-55	25-35	20-30	20-25	NP-5
	3-8	Very gravelly clay loam, very gravelly loam	GC	A-2	0-1	0-5	45-60	35-50	25-40	20-35	30-40	10-15
	8-14	Very gravelly loam	GM-GC	A-2	0-1	0-5	45-60	35-55	25-40	20-35	25-30	5-10
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Uripnes-----	0-4	Very stony sandy loam	SM	A-1	15-25	5-20	75-90	30-50	25-35	10-25	20-25	NP-5
	4-21	Weathered bedrock			0	0	0	0	0	0	---	NP
	21-25	Unweathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very gravelly loam	SM	A-2	0	0-10	70-80	45-55	35-45	25-35	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
621: Rock Outcrop.												
Findout-----	0-3	Very gravelly loam	SM, GM	A-1, A-2	0-1	5-10	55-70	40-55	25-35	20-30	20-25	NP-5
	3-8	Very gravelly clay loam, very gravelly loam	GC	A-2	0-1	0-5	45-60	35-50	25-40	20-35	30-40	10-15
	8-14	Very gravelly loam	GM-GC	A-2	0-1	0-5	45-60	35-55	25-40	20-35	25-30	5-10
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
621 (con.): Izod-----	0-4	Extremely cobbly loam	SC-SM, SM, GM-GC, GM	A-2	0	40-50	55-70	25-40	20-40	15-35	25-35	5-10
	4-8	Very gravelly loam, extremely gravelly loam	GM-GC, GM	A-2	0	0-25	20-55	15-50	15-45	10-35	25-35	5-10
	8-12	Unweathered bedrock			0	0	0	0	0	0	---	NP
622: Rock Outcrop.												
Findout-----	0-3	Very gravelly loam	SM, GM	A-1, A-2	0-1	5-10	55-70	40-55	25-35	20-30	20-25	NP-5
	3-8	Very gravelly clay loam, very gravelly loam	GC	A-2	0-1	0-5	45-60	35-50	25-40	20-35	30-40	10-15
	8-14	Very gravelly loam	GM-GC	A-2	0-1	0-5	45-60	35-55	25-40	20-35	25-30	5-10
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-3	Very stony loam	GM, GM-GC	A-2, A-4	5-25	20-30	60-70	55-65	45-55	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
640: Mazuma-----	0-5	Silt loam	ML	A-4	0	0	100	100	90-100	70-80	20-25	NP-5
	5-25	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	100	90-100	30-50	20-25	NP-5
	25-60	Stratified silt loam to gravelly coarse sand	SM, ML	A-2, A-4	0	0	75-100	70-85	50-75	25-55	20-25	NP-5
Bango-----	0-2	Sandy loam	SM	A-1, A-2	0	0-5	90-95	90-95	45-60	15-30	---	NP
	2-12	Loam, clay loam, sandy clay loam	CL	A-6	0	0-5	90-100	90-100	75-90	55-75	30-35	10-15
	12-60	Stratified gravelly loamy coarse sand to silty clay loam	CL, CL-ML	A-6, A-4	0	0-5	85-95	85-95	70-85	55-70	25-35	5-15

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

[illegible]

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
650 (con.): Labou-----	In											
	0-4	Gravelly fine sandy loam	SM	A-1, A-2	0	0-5	65-80	55-70	45-65	20-30	0-14	NP
	4-11	Very gravelly clay, very gravelly clay loam	GC	A-2	0-1	0-10	35-60	25-50	20-45	15-35	50-65	30-40
	11-15	Unweathered bedrock			0	0	0	0	0	0	---	NP
660: Loomer-----	0-7	Very gravelly loam	GM-GC, GC	A-2, A-4, A-6	0-5	10-25	45-65	35-55	30-50	20-40	25-35	5-15
	7-17	Extremely cobble clay, extremely gravelly clay, extremely cobble clay loam	GC	A-2	0-5	30-55	30-45	20-35	15-30	15-25	40-55	20-35
	17-21	Unweathered bedrock			0	0	0	0	0	0	---	NP
Duco-----	0-4	Stony loam	SC-SM, GM-GC, CL-ML	A-4	1-5	5-10	60-80	55-75	45-65	35-55	20-30	5-10
	4-11	Very gravelly clay loam, extremely stony clay loam, very cobble sandy clay loam	GC	A-2	5-30	10-55	35-60	30-55	20-35	15-30	35-40	15-20
	11-15	Unweathered bedrock			0	0	0	0	0	0	---	NP
662: Loomer-----	0-7	Gravelly loam	GM-GC, GC, CL-ML, CL	A-4, A-6	0	5-10	65-80	55-75	45-65	35-55	25-35	5-15
	7-17	Extremely cobble clay, extremely gravelly clay, extremely cobble clay loam	GC	A-2	0-5	30-55	30-45	20-35	15-30	15-25	40-55	20-35
	17-21	Unweathered bedrock			0	0	0	0	0	0	---	NP
Bombadil-----	0-5	Stony loam	SM	A-4	1-5	10-20	75-80	60-75	50-65	35-50	15-25	NP-5
	5-8	Loam, gravelly loam	CL-ML, CL	A-4, A-6	0-5	0-10	75-100	70-90	65-85	50-70	25-35	5-15
	8-12	Loam, clay loam, gravelly clay loam	CL	A-6	0-5	0-10	75-100	70-90	65-85	55-75	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
662 (con.): Old Camp-----	In											
	0-3	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
670: Celeton-----	0-2	Very gravelly loam	GM	A-1, A-2	0	0-5	50-65	25-40	20-35	20-30	40-50	NP-5
	2-7	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	7-14	Weathered bedrock			0	0	0	0	0	0	---	NP
Genegraf-----	0-6	Very gravelly sandy loam	SM, GM	A-1	0	0-5	45-65	30-50	20-35	15-25	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0	0-10	45-60	35-50	25-45	10-25	15-25	NP-5
Bedwyr-----	0-2	Very gravelly loam	SC, GC	A-2	0-1	0-10	60-70	40-50	30-40	25-35	25-35	10-15
	2-10	Clay, silty clay	CH	A-7	0	0	95-100	90-100	90-100	70-80	50-60	25-30
	10-13	Gravelly clay, gravelly silty clay	CH	A-7	0	0	90-100	60-75	55-75	50-65	50-60	25-30
	13-23	Weathered bedrock			0	0	0	0	0	0	---	NP
671: Celeton-----	0-2	Very gravelly loam	GM	A-1, A-2	0	0-5	50-65	25-40	20-35	20-30	40-50	NP-5
	2-7	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	7-14	Weathered bedrock			0	0	0	0	0	0	---	NP



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
671 (con.): Bedwyr-----	0-2	Very gravelly loam	SC, GC	A-2	0-1	0-10	60-70	40-50	30-40	25-35	25-35	10-15
	2-10	Clay, silty clay	CH	A-7	0	0	95-100	90-100	90-100	70-80	50-60	25-30
	10-13	Gravelly clay, gravelly silty clay	CH	A-7	0	0	90-100	60-75	55-75	50-65	50-60	25-30
	13-23	Weathered bedrock			0	0	0	0	0	0	---	NP
Watoopah-----	0-2	Sand	SM	A-2	0	0	90-100	90-100	50-80	10-30	---	NP
	2-16	Sandy loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0	70-100	60-100	40-80	20-50	15-25	NP-5
	16-29	Gravelly loamy sand, gravelly sandy loam, sandy loam	SM	A-1, A-2, A-4	0	0-5	60-100	50-95	30-70	20-50	---	NP
	29-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1	0	0-5	60-85	50-75	30-50	5-25	---	NP
672: Celeton-----	0-2	Very cobbly sandy loam	GM, SM	A-1, A-2	0	35-45	45-70	40-70	30-50	15-35	40-50	NP-5
	2-7	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	7-14	Weathered bedrock			0	0	0	0	0	0	---	NP
Barnmot-----	0-2	Very gravelly clay	GC, GM	A-2, A-7	0	0-10	50-60	30-50	25-45	20-40	45-55	20-25
	2-60	Clay, clay loam	CH, MH	A-7	0	0	90-100	90-100	80-95	70-85	50-60	20-30
Chilper-----	0-2	Gravelly very fine sandy loam	GM, SM	A-4	0-1	5-10	60-80	55-75	50-70	35-50	0-14	NP
	2-5	Very fine sandy loam	ML	A-4	0	0-5	80-100	75-100	70-90	50-70	0-14	NP
	5-25	Clay loam, clay	CL, CH	A-7	0	0	80-100	75-100	65-80	50-70	40-55	15-30
	25-60	Extremely gravelly sandy loam	GP, GP-GM, GM	A-1	0	0-10	15-35	10-25	5-20	0-15	0-14	NP
680: Bombadil-----	0-5	Stony loam	SM	A-4	1-5	10-20	75-80	60-75	50-65	35-50	15-25	NP-5
	5-8	Loam, gravelly loam	CL-ML, CL	A-4, A-6	0-5	0-10	75-100	70-90	65-85	50-70	25-35	5-15
	8-12	Loam, clay loam, gravelly clay loam	CL	A-6	0-5	0-10	75-100	70-90	65-85	55-75	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
680 (con.): Old Camp-----	In											
	0-3	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
691: Osobb-----	0-3	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-1, A-2, A-4	5-25	5-45	60-80	50-70	45-65	15-40	20-30	NP-10
	3-17	Extremely cobbly very fine sandy loam, very cobbly fine sandy loam, very cobbly loam	GP-GM, GM, GM-GC	A-1, A-2	5-15	30-50	25-60	20-50	15-35	5-20	20-30	NP-10
	17-18	Indurated			0	0	0	0	0	0	---	NP
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very gravelly sandy loam	SM	A-1	0	0-10	70-80	45-55	30-40	15-25	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
Pirouette-----	0-4	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-4	5-25	25-30	65-80	65-75	55-70	35-50	20-30	NP-10
	4-11	Very cobbly clay loam	SC, CL, GC	A-6, A-7	0-5	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
700: Clan Alpine-----	0-10	Very gravelly loam	GM-GC	A-2, A-4	0-5	5-25	60-70	50-60	35-45	30-40	25-30	5-10
	10-39	Very cobbly loam, very cobbly clay loam, very gravelly clay loam	GC	A-2, A-6	0-10	15-35	50-70	35-60	25-50	20-40	30-40	10-20
	39-43	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
700 (con.): Itca-----	In											
	0-4	Stony loam	CL, CL-ML	A-4, A-6	1-5	15-30	70-90	65-85	60-70	50-60	25-35	5-15
	4-16	Very cobbly clay loam, very gravelly clay, extremely gravelly clay	CL, GC	A-7, A-2	1-5	0-55	40-80	30-75	25-70	20-60	40-50	15-25
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-3	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
710: Luning-----	0-3	Loamy sand	SM	A-2	0	0	100	90-100	70-85	20-35	---	NP
	3-60	Stratified sandy loam to very gravelly coarse sand	SM	A-1, A-2	0-10	0	75-95	55-90	45-80	10-30	---	NP
Izo-----	0-4	Very gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0-5	0-15	35-60	30-50	15-35	0-10	---	NP
	4-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM	A-1	0-5	0-15	20-40	15-35	10-20	0-10	---	NP
730: Hooplite-----	0-4	Very gravelly fine sandy loam	GM-GC	A-2	0	0-10	45-60	35-50	30-45	10-20	20-30	5-10
	4-8	Very gravelly loam, very gravelly clay loam	GC	A-2, A-6	0	0-15	45-60	35-50	30-45	25-40	30-40	10-15
	8-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Theon-----	0-3	Very gravelly sandy loam	GM-GC, GM	A-2, A-1	0-1	5-10	40-60	30-50	20-45	15-35	20-30	NP-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-15	40-60	30-50	25-40	15-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
730 (con.): Old Camp-----	In											
	0-3	Very gravelly fine sandy loam	GM, GM-GC	A-1, A-2	0-1	5-10	45-60	35-50	25-40	10-25	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
731: Hooplite-----	0-4	Very gravelly fine sandy loam	GM-GC	A-2	0	0-10	45-60	35-50	30-45	10-20	20-30	5-10
	4-8	Very gravelly loam, very gravelly clay loam	GC	A-2, A-6	0	0-15	45-60	35-50	30-45	25-40	30-40	10-15
	8-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-3	Very gravelly fine sandy loam	GM, GM-GC	A-1, A-2	0-1	5-10	45-60	35-50	25-40	10-25	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very gravelly sandy loam	SM	A-1	0	0-10	70-80	45-55	30-40	15-25	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
732: Hooplite-----	0-4	Very gravelly fine sandy loam	GM-GC, SC-SM	A-2	5-25	5-15	55-70	45-50	40-50	20-30	20-30	5-10
	4-9	Very gravelly loam, very gravelly clay loam	GC	A-2, A-6	0	0-15	45-60	35-50	30-45	25-40	30-40	10-15
	9-13	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
732 (con.): Old Camp-----	In											
	0-3	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Puett-----	0-3	Fine sandy loam	SM	A-4	0	0	90-100	85-95	60-80	35-50	---	NP
	3-11	Coarse sandy loam, fine sandy loam, sandy loam	SM, ML	A-1, A-2, A-4	0	0	80-100	75-95	40-80	15-55	---	NP
	11-20	Weathered bedrock			0	0	0	0	0	0	---	NP
733: Hooplite-----	0-4	Very gravelly fine sandy loam	GM-GC	A-2	0	0-10	45-60	35-50	30-45	10-20	20-30	5-10
	4-8	Very gravelly loam, very gravelly clay loam	GC	A-2, A-6	0	0-15	45-60	35-50	30-45	25-40	30-40	10-15
	8-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-3	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Jung-----	0-7	Stony loam	ML, SM, GM	A-4	1-5	10-20	70-90	70-80	55-70	45-65	20-30	NP-5
	7-15	Very cobbly clay loam, very cobbly clay, very gravelly clay loam	GC	A-7	0	15-40	55-65	50-60	40-50	35-45	40-55	20-30
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
734: Hooplite-----	In											
	0-4	Very gravelly fine sandy loam	GM-GC	A-2	0	0-10	45-60	35-50	30-45	10-20	20-30	5-10
	4-8	Very gravelly loam, very gravelly clay loam	GC	A-2, A-6	0	0-15	45-60	35-50	30-45	25-40	30-40	10-15
	8-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Theon-----	0-3	Very gravelly sandy loam	GM-GC, GM	A-2, A-1	0-1	5-10	40-60	30-50	20-45	15-35	20-30	NP-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-15	40-60	30-50	25-40	15-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Puett-----	0-3	Fine sandy loam	SM	A-4	0	0	90-100	85-95	60-80	35-50	---	NP
	3-11	Coarse sandy loam, fine sandy loam, sandy loam	SM, ML	A-1, A-2, A-4	0	0	80-100	75-95	40-80	15-55	---	NP
	11-20	Weathered bedrock			0	0	0	0	0	0	---	NP
735: Hooplite-----	0-4	Very gravelly fine sandy loam	GM-GC	A-2	0	0-10	45-60	35-50	30-45	10-20	20-30	5-10
	4-8	Very gravelly loam, very gravelly clay loam	GC	A-2, A-6	0	0-15	45-60	35-50	30-45	25-40	30-40	10-15
	8-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-3	Very stony loam	GM, GM-GC	A-2, A-4	5-25	20-30	60-70	55-65	45-55	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

[illegible]

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In				Pct	Pct					Pct	
741 (con.): Packer-----	0-10	Extremely gravelly loam	GM-GC, GP-GC	A-2	0-5	15-25	30-40	15-30	10-25	5-20	20-30	5-10
	10-16	Extremely cobbly clay loam, extremely cobbly loam	GC	A-2	5-20	30-55	40-55	30-45	25-40	15-30	30-40	10-15
	16-60	Extremely cobbly sandy loam, extremely cobbly loam	GM	A-1	0-15	40-55	40-55	30-45	20-35	10-25	20-25	NP-5
Hapgood-----	0-19	Gravelly loam	SC-SM	A-4	0	5-10	70-80	60-75	55-70	35-50	25-30	5-10
	19-46	Very gravelly sandy loam, very cobbly loam	GM-GC, GC	A-2	0	15-40	55-65	50-60	35-45	20-35	25-35	5-15
	46-52	Unweathered bedrock			0	0	0	0	0	0	---	NP
760: Burnborough----	0-17	Very gravelly loam	SC, SC-SM	A-2	0	5-10	65-75	40-55	30-45	25-35	20-35	5-15
	17-60	Very gravelly loam, very gravelly clay loam	GC, SC	A-2	0-5	15-25	55-65	35-60	20-35	15-30	25-40	10-20
Cleavage-----	0-7	Very gravelly loam	GM-GC, GC	A-2, A-4, A-6	0	0-10	50-70	30-50	25-45	20-40	25-35	5-15
	7-14	Very cobbly clay loam, extremely gravelly clay loam, very gravelly loam	GC	A-2	0-5	0-45	40-55	30-45	25-45	20-35	30-45	10-20
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Welch-----	0-24	Clay loam	CL	A-6	0	0	95-100	95-100	90-100	70-90	35-40	15-20
	24-60	Stratified sandy loam to silty clay loam	CL	A-6	0	0	80-100	75-100	65-90	50-70	30-40	10-20
761: Burnborough----	0-17	Very gravelly loam	SC, SC-SM	A-2	0	5-10	65-75	40-55	30-45	25-35	20-35	5-15
	17-60	Very gravelly loam, very gravelly clay loam	GC, SC	A-2	0-5	15-25	55-65	35-60	20-35	15-30	25-40	10-20



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
761 (con.): Cleavage-----	0-7	Very gravelly loam	GM-GC, GC	A-2, A-4, A-6	0	0-10	50-70	30-50	25-45	20-40	25-35	5-15
	7-14	Very cobbly clay loam, extremely gravelly clay loam, very gravelly loam	GC	A-2	0-5	0-45	40-55	30-45	25-45	20-35	30-45	10-20
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
Reluctan-----	0-9	Very gravelly loam	GM-GC	A-2, A-4	0	10-25	35-65	30-55	25-55	20-40	25-30	5-10
	9-25	Gravelly clay loam, gravelly loam	GC, CL	A-6, A-7	0	0-15	65-85	60-75	55-75	40-60	35-45	15-20
	25-29	Unweathered bedrock			0	0	0	0	0	0	---	NP
770: Chilper-----	0-2	Gravelly very fine sandy loam	GM, SM	A-4	0-1	5-10	60-80	55-75	50-70	35-50	0-14	NP
	2-5	Very fine sandy loam	ML	A-4	0	0-5	80-100	75-100	70-90	50-70	0-14	NP
	5-25	Clay loam, clay	CL, CH	A-7	0	0	80-100	75-100	65-80	50-70	40-55	15-30
	25-60	Extremely gravelly sandy loam	GP, GP-GM, GM	A-1	0	0-10	15-35	10-25	5-20	0-15	0-14	NP
Bundorf-----	0-2	Gravelly loam	SC-SM, SC	A-2, A-4, A-6	0	0-5	65-85	55-70	45-60	30-45	25-35	5-15
	2-11	Clay loam, clay	CL, CH	A-7	0	0	90-100	90-100	85-95	65-85	45-60	20-35
	11-14	Very gravelly clay, very gravelly clay loam	GC	A-2	0-5	10-30	50-60	35-45	30-40	25-35	45-60	20-35
	14-45	Indurated			0	0	0	0	0	0	---	NP
Trocken-----	0-3	Gravelly very fine sandy loam	GM, SM	A-2, A-4	0	0-15	65-85	60-75	50-70	30-50	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10
772: Chilper-----	0-2	Cobbly very fine sandy loam	ML, GM, SM	A-4	0-1	10-25	70-90	65-85	60-80	45-60	0-14	NP
	2-5	Very fine sandy loam	ML	A-4	0	0-5	80-100	75-100	70-90	50-70	0-14	NP
	5-25	Clay loam, clay	CL, CH	A-7	0	0	80-100	75-100	65-80	50-70	40-55	15-30
	25-60	Extremely gravelly sandy loam	GP, GP-GM	A-1	0	0-10	15-35	10-25	5-20	0-10	0-14	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
772 (con.): Troocken-----	0-3	Gravelly very fine sandy loam	GM, SM	A-2, A-4	0	0-15	65-85	60-75	50-70	30-50	20-25	NP-5
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10
Jervall-----	0-4	Gravelly very fine sandy loam	SM	A-4	0	0-10	70-85	55-75	50-75	35-50	---	NP
	4-18	Gravelly clay loam, gravelly silty clay loam	CL	A-6	0	0-5	65-85	60-75	55-75	50-65	35-40	15-20
	18-60	Very gravelly sandy loam, very gravelly fine sandy loam	GM	A-1	0	0-10	45-60	35-50	25-45	15-25	---	NP
790: Jacratz-----	0-2	Very gravelly clay loam	GC	A-2	0	5-15	50-60	30-50	30-40	25-35	30-40	10-20
	2-8	Gravelly clay loam, gravelly loam	SC	A-6	0	0-5	70-80	50-75	45-60	35-50	30-40	10-20
	8-12	Weathered bedrock			0	0	0	0	0	0	---	NP
Nayfan-----	0-3	Gravelly loam	SC	A-6	0	0-5	70-90	60-75	50-60	40-50	25-30	10-15
	3-27	Gravelly loam	GC, SC	A-6	0	0-5	60-80	50-75	40-55	35-45	25-30	10-15
	27-31	Weathered bedrock			0	0	0	0	0	0	---	NP
800: Bedwyr-----	0-2	Stony loam	SC, CL	A-6	1-5	5-20	80-95	60-75	50-65	40-55	25-35	10-15
	2-10	Clay, silty clay	CH	A-7	0	0	95-100	90-100	90-100	70-80	50-60	25-30
	10-13	Gravelly clay, gravelly silty clay	CH	A-7	0	0	90-100	60-75	55-75	50-65	50-60	25-30
	13-23	Weathered bedrock			0	0	0	0	0	0	---	NP
Celeton-----	0-2	Very gravelly loam	GM	A-1, A-2	0	0-5	50-65	25-40	20-35	20-30	40-50	NP-5
	2-7	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	7-14	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
802: Bedwyr-----	0-2	Very gravelly loam	SC, GC	A-2	0-1	0-10	60-70	40-50	30-40	25-35	25-35	10-15
	2-10	Clay, silty clay	CH	A-7	0	0	95-100	90-100	90-100	70-80	50-60	25-30
	10-13	Gravelly clay, gravelly silty clay	CH	A-7	0	0	90-100	60-75	55-75	50-65	50-60	25-30
	13-23	Weathered bedrock			0	0	0	0	0	0	---	NP
Bedzee-----	0-7	Very stony loam	CL	A-6	5-25	10-15	90-100	90-100	65-80	50-60	30-35	10-15
	7-17	Gravelly clay	CH, GC, SC	A-7	0	0-5	70-90	50-75	50-70	45-65	50-65	25-40
	17-21	Weathered bedrock			0	0	0	0	0	0	---	NP
Jobpeak-----	0-8	Very gravelly loam	GM, GM-GC	A-1, A-2, A-4	0-5	15-30	45-65	35-60	25-45	20-40	15-25	NP-10
	8-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
820: Aboten-----	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	35-55	30-50	20-40	15-25	15-25	NP-5
	5-19	Clay loam, loam	ML, CL	A-6	0	0-10	80-100	75-90	70-90	50-70	35-40	10-15
	19-21	Cemented			0	0	0	0	0	0	---	NP
	21-60	Extremely gravelly sandy loam, very gravelly loamy sand	GP-GM, GM	A-1	0	0-15	25-40	20-35	10-20	5-15	---	NP
Inmo-----	0-8	Very gravelly sandy loam	SM	A-1	0	0-5	80-90	35-50	25-40	10-20	15-20	NP-5
	8-40	Stratified extremely gravelly coarse sand to very gravelly loamy sand	SP, SP-SM	A-1	0	0-5	60-85	20-35	10-25	0-10	---	NP
	40-60	Very gravelly loamy coarse sand	SM	A-1	0	0-5	80-90	40-55	25-40	10-15	---	NP
Bluewing-----	0-7	Very gravelly loamy sand	GP-GM	A-1	0	0-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	10-25	30-40	25-35	15-25	5-10	---	NP
830: Corral-----	0-3	Stony loam	CL-ML, ML	A-4	1-5	5-15	80-100	75-95	60-80	50-65	25-35	5-10
	3-14	Clay loam, loam, sandy clay loam	CL	A-6	0	0	80-100	75-95	65-90	50-75	30-40	10-20
	14-18	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
830 (con.): Celeton-----	0-2	Cobbly sandy loam	SM	A-2, A-5	0	25-35	75-85	75-85	50-60	25-40	40-50	NP-5
	2-7	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	7-14	Weathered bedrock			0	0	0	0	0	0	---	NP
Bedwyr-----	0-2	Stony loam	SC, CL	A-6	1-5	5-20	80-95	60-75	50-65	40-55	25-35	10-15
	2-10	Clay, silty clay	CH	A-7	0	0	95-100	90-100	90-100	70-80	50-60	25-30
	10-13	Gravelly clay, gravelly silty clay	CH	A-7	0	0	90-100	60-75	55-75	50-65	50-60	25-30
	13-23	Weathered bedrock			0	0	0	0	0	0	---	NP
840: Belate-----	0-12	Very gravelly loam	GM-GC	A-2	1-5	5-10	50-65	35-50	30-40	25-35	20-25	5-10
	12-60	Very gravelly clay loam, very gravelly loam	GC	A-2, A-6	0	5-10	50-65	35-50	35-45	30-40	25-35	10-15
Roca-----	0-6	Very stony loam	CL	A-6	5-25	25-55	85-100	75-85	70-80	50-60	25-35	10-15
	6-25	Very gravelly clay loam, very gravelly clay	GC, SC	A-2	0	0-10	60-75	30-50	25-45	20-35	45-60	20-30
	25-29	Unweathered bedrock			0	0	0	0	0	0	---	NP
Cleavage-----	0-7	Very gravelly loam	GM-GC, GC	A-2, A-4, A-6	0	0-10	50-70	30-50	25-45	20-40	25-35	5-15
	7-14	Very cobbly clay loam, extremely gravelly clay loam, very gravelly loam	GC	A-2	0-5	0-45	40-55	30-45	25-45	20-35	30-45	10-20
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
850: Walti-----	0-4	Very stony loam	CL-ML, ML	A-4	5-25	5-25	75-90	65-80	55-70	50-60	20-30	NP-10
	4-10	Clay loam, gravelly clay loam	CL	A-6	0	0-10	90-100	65-90	60-80	50-65	35-40	15-20
	10-22	Clay, gravelly clay	CH, MH	A-7	0	0-10	90-100	65-90	60-80	50-75	55-65	25-35
	22-26	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
850 (con.): Roca-----	0-6	Very stony loam	CL	A-6	5-25	25-55	85-100	75-85	70-80	50-60	25-35	10-15
	6-25	Very gravelly clay loam, very gravelly clay	GC, SC	A-2	0	0-10	60-75	30-50	25-45	20-35	45-60	20-30
	25-29	Unweathered bedrock			0	0	0	0	0	0	---	NP
Belate-----	0-12	Very gravelly loam	GM-GC	A-2	1-5	5-10	50-65	35-50	30-40	25-35	20-25	5-10
	12-60	Very gravelly clay loam, very gravelly loam	GC	A-2, A-6	0	5-10	50-65	35-50	35-45	30-40	25-35	10-15
860: Teguro-----	0-6	Very stony loam	SM	A-4	5-20	0-20	70-80	60-75	45-60	35-50	15-25	NP-5
	6-16	Gravelly clay loam, gravelly loam	SC	A-2, A-6	0	0-10	65-80	50-75	35-60	30-50	30-40	15-20
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Colbar-----	0-6	Very cobbly loam	CL-ML	A-4	0-5	50-60	90-100	85-95	75-85	50-60	20-30	5-10
	6-16	Cobbly loam, gravelly clay loam, cobbly clay loam	CL	A-6	0	10-35	90-95	70-85	60-80	50-65	30-40	10-20
	16-21	Gravelly loam, cobbly loam	SC-SM, CL-ML	A-4	0	5-30	75-95	60-90	55-75	35-55	20-30	5-10
	21-31	Unweathered bedrock			0	0	0	0	0	0	---	NP
Cleavage-----	0-7	Very gravelly loam	GM-GC, GC	A-2, A-4, A-6	0	0-10	50-70	30-50	25-45	20-40	25-35	5-15
	7-14	Very cobbly clay loam, extremely gravelly clay loam, very gravelly loam	GC	A-2	0-5	0-45	40-55	30-45	25-45	20-35	30-45	10-20
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
870: Chill-----	0-4	Very stony sandy loam	SM, GM	A-1	5-25	20-35	55-80	45-65	25-40	15-25	---	NP
	4-8	Gravelly sandy clay loam	SC	A-2	0	0	90-100	50-75	40-60	25-35	35-45	15-20
	8-22	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
870 (con.): Cleavage-----	In											
	0-4	Very stony sandy loam	CL-ML, CL, SC-SM, SC	A-4, A-6	5-25	5-15	80-95	70-90	60-80	40-70	25-35	5-15
	4-18	Very cobbly clay loam, extremely cobbly sandy clay loam, very gravelly clay loam	GC	A-2	5-15	10-40	40-55	30-45	25-45	20-35	30-45	10-20
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
880: Coppereid-----	0-2	Gravelly loam	SM	A-4, A-2	0	0-10	70-80	50-75	45-60	30-45	20-25	NP-5
	2-9	Gravelly loam	SM	A-4	0	0-5	70-85	55-75	50-65	40-50	20-25	NP-5
	9-13	Weathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very gravelly loam	SM	A-2	0	0-10	70-80	45-55	35-45	25-35	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
Findout-----	0-3	Very gravelly loam	SM, GM	A-1, A-2	0-1	5-10	55-70	40-55	25-35	20-30	20-25	NP-5
	3-8	Very gravelly clay loam, very gravelly loam	GC	A-2	0-1	0-5	45-60	35-50	25-40	20-35	30-40	10-15
	8-14	Very gravelly loam	GM-GC	A-2	0-1	0-5	45-60	35-55	25-40	20-35	25-30	5-10
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
900: Playas-----	0-6	Silty clay loam	ML	A-6, A-7	0	0	100	100	100	90-100	35-50	10-20
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH	A-7	0	0	100	100	100	90-100	45-75	20-40
901: Dune Land-----	0-6	Fine sand	SP, SP-SM, SM	A-3, A-2	0	0	100	100	60-80	0-25	0-14	NP
	6-60	Sand, fine sand	SP, SP-SM, SM	A-3, A-2	0	0	100	100	50-80	0-25	0-14	NP
Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
902: Badland-----	0-6	Variable	CL, CH, MH, ML	A-7	0	0	100	100	100	90-100	45-75	20-35
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH, ML	A-7	0	0	100	100	100	90-100	45-75	20-35

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
903: Badland-----	In											
	0-6	Variable	CL, CH, MH, ML	A-7	0	0	100	100	100	90-100	45-75	20-35
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH, ML	A-7	0	0	100	100	100	90-100	45-75	20-35
Rebel-----	0-11	Loam	ML	A-4	0	0	95-100	90-100	80-95	50-65	20-25	NP-5
	11-60	Fine sandy loam, sandy loam, loam	CL-ML, ML	A-4	0	0	100	85-95	70-80	50-60	20-30	NP-10
Yody-----	0-7	Gravelly sandy loam	SM	A-1	0	0-5	70-80	65-75	40-50	20-25	---	NP
	7-16	Gravelly sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	75-85	65-75	55-65	35-50	30-40	10-20
	16-30	Gravelly loam, gravelly sandy loam, gravelly loamy sand	SM, GM	A-1, A-2	0	0-5	60-70	50-60	35-50	20-35	20-25	NP-5
	30-60	Cemented			0	0	0	0	0	0	---	NP
910: Rock Outcrop.												
Theriot-----	0-4	Very stony loam	GM, ML, SM	A-4	15-25	5-25	45-80	45-80	40-75	35-65	20-25	NP-5
	4-9	Very stony loam, very cobbly loam, very gravelly sandy loam	GM, SM	A-1, A-2, A-4	0-25	10-40	40-75	35-75	25-60	15-50	20-25	NP-5
	9-13	Unweathered bedrock			0	0	0	0	0	0	---	NP
Findout-----	0-3	Very gravelly loam	SM, GM	A-1, A-2	0-1	5-10	55-70	40-55	25-35	20-30	20-25	NP-5
	3-8	Very gravelly clay loam, very gravelly loam	GC	A-2	0-1	0-5	45-60	35-50	25-40	20-35	30-40	10-15
	8-14	Very gravelly loam	GM-GC	A-2	0-1	0-5	45-60	35-55	25-40	20-35	25-30	5-10
	14-18	Unweathered bedrock			0	0	0	0	0	0	---	NP
930: Layview-----	0-5	Very gravelly sandy loam	GM-GC	A-2	0-5	5-15	35-60	30-55	20-35	10-20	25-30	5-10
	5-13	Very gravelly loam, very gravelly clay loam	GC	A-2, A-6	0-5	5-15	35-60	30-55	25-45	20-40	30-40	15-20
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
930 (con.): Packer-----	0-10	Very cobbly loam	GM	A-2, A-4	0-5	20-40	55-65	45-55	40-50	30-40	25-30	NP-5
	10-16	Extremely cobbly clay loam, extremely cobbly sandy clay loam, extremely cobbly loam	GC, GP-GC	A-2	5-20	30-50	20-40	15-35	10-30	5-25	30-40	15-25
	16-42	Very cobbly sandy loam, extremely cobbly sandy loam, very cobbly loam	GM	A-1	0-15	20-50	35-50	30-50	15-40	10-25	20-25	NP-5
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	NP
Hapgood-----	0-19	Gravelly loam	SC-SM	A-4	0	5-10	70-80	60-75	55-70	35-50	25-30	5-10
	19-46	Very gravelly loam	GC, GM-GC	A-2	0	5-25	50-60	35-50	30-40	20-35	25-35	5-15
	46-52	Very cobbly loam, very gravelly loam	GC, GM-GC	A-2	0	15-40	55-65	50-60	35-45	25-35	25-35	5-15
940: Old Camp-----	0-3	Extremely stony loam	GM, GM-GC	A-2, A-4	25-50	10-20	60-70	55-65	50-60	30-40	15-25	NP-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	15-25	20-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-3	Extremely stony loam	GM-GC, SC-SM	A-2, A-4	25-35	10-20	60-70	55-65	45-55	30-40	15-25	5-10
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	10-35	10-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Rubble Land----	0-60	Fragmental material	GP	A-1	30-65	30-65	0-10	0-5	0-5	0	0-14	NP
960: Kolda-----	0-23	Silt loam	CL-ML	A-4	0	0	100	100	80-90	60-80	20-30	5-10
	23-34	Silt loam	CL	A-6	0	0	100	100	80-90	60-80	30-35	10-15
	34-58	Silty clay	CL	A-7	0	0	100	100	90-100	85-95	40-45	15-20
	58-65	Clay	CL, CH	A-7	0	0	100	100	90-100	85-95	45-65	20-35



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
960 (con.): Umberland-----	0-10 10-60	Silty clay loam Silty clay, silty clay loam, clay	CL, ML CL, CH	A-7 A-7	0 0	0 0	100 100	100 100	90-100 95-100	85-95 85-95	40-50 40-55	15-20 20-30
970: Rock Outcrop.												
Jobpeak-----	0-8 8-18	Very gravelly loam Unweathered bedrock	GM, GM-GC	A-1, A-2, A-4	0-5 0	15-30 0	45-65 0	35-60 0	25-45 0	20-40 0	15-25 ---	NP-10 NP
Teguro-----	0-6 6-16 16-20	Very stony loam Gravelly clay loam, gravelly loam Unweathered bedrock	SM SC	A-4 A-2, A-6	5-20 0	0-20 0-10	70-80 65-80	60-75 50-75	45-60 35-60	35-50 30-50	15-25 30-40	NP-5 15-20
980: Madeline-----	0-4 4-12 12-17 17-21	Very stony loam Sandy clay loam, clay loam, sandy clay Sandy clay, gravelly clay, stony sandy clay Unweathered bedrock	GC, SC, CL SC, CL	A-6 A-2, A-6, A-7	5-10 0	5-20 0-10	70-85 85-95	65-80 80-90	55-75 65-80	45-55 30-60	30-35 35-45	10-15 15-20
			SC, CL, CH, GC	A-2, A-7	0-5	5-15	60-95	55-90	45-75	30-55	45-65	25-40
					0	0	0	0	0	0	---	NP
Millerlux-----	0-6 6-14 14-19 19-23	Very stony loam Clay Clay, clay loam, gravelly clay Unweathered bedrock	SC-SM, SC CH CL, CH, SC, GC	A-4, A-6 A-7 A-7	5-25 0 0	0-10 0-10 0-15	75-90 90-100 70-90	65-80 85-100 65-85	45-65 80-95 60-80	35-50 60-75 45-60	25-35 50-65 40-55	5-15 25-40 15-30
					0	0	0	0	0	0	---	NP
990: Millerlux-----	0-6 6-14 14-19 19-23	Very stony loam Clay Clay, clay loam, gravelly clay Unweathered bedrock	SC-SM, SC CH CL, CH, SC, GC	A-4, A-6 A-7 A-7	5-25 0 0	0-10 0-10 0-15	75-90 90-100 70-90	65-80 85-100 65-85	45-65 80-95 60-80	35-50 60-75 45-60	25-35 50-65 40-55	5-15 25-40 15-30
					0	0	0	0	0	0	---	NP
Ninemile-----	0-7 7-15 15-19	Very stony loam Clay, gravelly clay Unweathered bedrock	CL-ML CH	A-4 A-7	5-25 0	15-40 0-15	70-90 70-100	70-85 65-100	60-75 60-90	50-60 50-80	25-30 55-65	5-10 30-35
					0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
990 (con.): Madeline-----	In											
	0-4	Very stony loam	GC, SC, CL	A-6	5-10	5-20	70-85	65-80	55-75	45-55	30-35	10-15
	4-12	Sandy clay loam, clay loam, sandy clay	SC, CL	A-2, A-6, A-7	0	0-10	85-95	80-90	65-80	30-60	35-45	15-20
	12-17	Sandy clay, gravelly clay, stony sandy clay	SC, CL, CH, GC	A-2, A-7	0-5	5-15	60-95	55-90	45-75	30-55	45-65	25-40
	17-21	Unweathered bedrock			0	0	0	0	0	0	---	NP
1000: Stumble-----	0-4	Loamy sand	SM	A-2	0	0-5	85-100	85-100	75-90	15-25	---	NP
	4-20	Loamy sand, loamy fine sand	SM	A-2	0	0-5	85-100	85-100	55-75	15-25	---	NP
	20-60	Gravelly loamy sand, gravelly loamy fine sand	SM	A-1, A-2	0	0-10	75-85	50-70	40-60	15-25	---	NP
1010: Downeyville-----	0-3	Very gravelly sandy loam	SC-SM, SM	A-1, A-2	0	5-20	60-70	30-55	20-45	15-30	15-25	NP-10
	3-9	Very gravelly loam, very gravelly fine sandy loam	GC	A-2, A-6	0-5	10-25	40-60	30-50	25-50	20-40	25-35	10-15
	9-13	Unweathered bedrock			0	0	0	0	0	0	---	NP
Stewval-----	0-3	Very gravelly fine sandy loam	GM-GC	A-2	0	0-10	35-55	30-45	20-35	10-20	20-25	5-10
	3-8	Extremely gravelly loam, very gravelly clay loam, very gravelly loam	GC	A-2	0-10	0-25	20-55	15-45	10-35	10-30	30-40	10-20
	8-12	Unweathered bedrock			0	0	0	0	0	0	---	NP
Blacktop-----	0-5	Very gravelly sandy loam	GM	A-1	0	5-10	35-60	30-50	20-40	10-25	20-30	NP-5
	5-9	Unweathered bedrock			0	0	0	0	0	0	---	NP
1011: Downeyville-----	0-3	Very gravelly sandy loam	SC-SM, SM	A-1, A-2	0	5-20	60-70	30-55	20-45	15-30	15-25	NP-10
	3-9	Very gravelly loam, very gravelly fine sandy loam	GC	A-2, A-6	0-5	10-25	40-60	30-50	25-50	20-40	25-35	10-15
	9-13	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1011 (con.): Blacktop-----	0-5	Very gravelly sandy loam	GM	A-1	0	5-10	35-60	30-50	20-40	10-25	20-30	NP-5
	5-9	Unweathered bedrock			0	0	0	0	0	0	---	NP
1012: Downeyville-----	0-3	Very stony fine sandy loam	SC-SM, SM	A-2, A-1	5-10	30-50	70-85	45-65	35-50	15-35	15-25	NP-10
	3-9	Very gravelly loam, very gravelly fine sandy loam	GC	A-2, A-6	0-5	10-25	40-60	30-50	25-50	20-40	25-35	10-15
	9-13	Unweathered bedrock			0	0	0	0	0	0	---	NP
Downeyville-----	0-3	Very stony fine sandy loam	SC-SM, SM	A-2, A-1	5-10	30-50	70-85	45-65	35-50	15-35	15-25	NP-10
	3-9	Very gravelly loam, very gravelly fine sandy loam	GC	A-2, A-6	0-5	10-25	40-60	30-50	25-50	20-40	25-35	10-15
	9-13	Unweathered bedrock			0	0	0	0	0	0	---	NP
Blacktop-----	0-5	Very gravelly sandy loam	GM	A-1	0	5-10	35-60	30-50	20-40	10-25	20-30	NP-5
	5-9	Unweathered bedrock			0	0	0	0	0	0	---	NP
1013: Downeyville-----	0-3	Very gravelly fine sandy loam	SC-SM, SM	A-1, A-2	0	5-20	60-70	30-55	25-45	15-30	15-25	NP-10
	3-9	Very gravelly loam, very gravelly fine sandy loam	GC	A-2, A-6	0-5	10-25	40-60	30-50	25-50	20-40	25-35	10-15
	9-13	Unweathered bedrock			0	0	0	0	0	0	---	NP
Downeyville-----	0-3	Very gravelly sandy loam	SC-SM, SM	A-1, A-2	0	5-20	60-70	30-55	20-45	15-30	15-25	NP-10
	3-9	Very gravelly loam, very gravelly fine sandy loam	GC	A-2, A-6	0-5	10-25	40-60	30-50	25-50	20-40	25-35	10-15
	9-13	Unweathered bedrock			0	0	0	0	0	0	---	NP
Gabbvally-----	0-4	Very stony loam	GM	A-4	5-25	5-10	60-75	55-70	45-55	35-50	20-25	NP-5
	4-13	Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam	GC, GM-GC	A-2	0-5	0-15	50-60	35-50	25-35	15-25	25-35	5-15
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1020: Unsel-----	In											
	0-5	Very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0-5	15-30	40-70	35-60	30-50	15-35	20-25	5-10
	5-12	Gravelly clay loam, gravelly sandy clay loam	SC	A-6	0	0	75-85	55-75	45-60	35-45	35-40	15-20
	12-35	Gravelly sandy loam, gravelly sandy clay loam	SC-SM	A-2	0	0	60-75	50-70	35-50	20-35	20-30	5-10
	35-60	Very gravelly sand, very gravelly loamy sand, extremely gravelly sand	GP-GM, GP	A-1	0	0	40-50	20-35	10-25	0-10	---	NP
Annaw-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	0-15	50-85	45-75	30-60	15-35	---	NP
	12-60	Stratified extremely gravelly loamy coarse sand to very gravelly loamy sand	GM, GP-GM	A-1	0-5	0-25	20-55	20-45	10-20	5-15	---	NP
Izo-----	0-4	Very gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0-5	0-15	35-60	30-50	15-35	0-10	---	NP
	4-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM	A-1	0-5	0-15	20-40	15-35	10-20	0-10	---	NP
1023: Unsel-----	0-5	Gravelly loam	SC	A-6	0	0	70-80	55-75	45-55	35-45	30-35	10-15
	5-12	Gravelly clay loam, gravelly sandy clay loam	SC	A-6	0	0	75-85	55-75	45-60	35-45	35-40	15-20
	12-35	Gravelly sandy loam, gravelly sandy clay loam	SC-SM	A-2	0	0	60-75	50-70	35-50	20-35	20-30	5-10
	35-60	Very gravelly sand, very gravelly loamy sand, extremely gravelly sand	GP-GM, GP	A-1	0	0	40-50	20-35	10-25	0-10	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1023 (con.): Pineval-----	In											
	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
1024: Unsel-----	0-5	Very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0-5	15-30	40-70	35-60	30-50	15-35	20-25	5-10
	5-12	Gravelly clay loam, gravelly sandy clay loam	SC	A-6	0	0	75-85	55-75	45-60	35-45	35-40	15-20
	12-35	Gravelly sandy loam, gravelly sandy clay loam	SC-SM	A-2	0	0	60-75	50-70	35-50	20-35	20-30	5-10
	35-60	Very gravelly sand, very gravelly loamy sand, extremely gravelly sand	GP-GM, GP	A-1	0	0	40-50	20-35	10-25	0-10	---	NP
Desatoya-----	0-6	Very gravelly loam	GM-GC	A-2	0	0-10	50-60	40-50	35-45	25-35	20-30	5-10
	6-15	Gravelly clay loam, gravelly clay	GC	A-7	0	0-5	65-75	55-70	50-60	40-50	40-50	20-30
	15-60	Stratified extremely gravelly sandy loam to very gravelly loamy sand	GM	A-1	0	25-35	35-50	25-45	15-30	10-15	15-25	NP-5
Roic-----	0-1	Very gravelly loam	GM	A-1, A-2	0	0-5	40-60	30-50	20-40	15-30	20-25	NP-5
	1-6	Very fine sandy loam, fine sandy loam, loam	CL-ML, SC-SM, ML, SM	A-4	0	0	90-100	80-100	70-90	35-70	20-30	NP-10
	6-10	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1025: Unsel-----	In											
	0-5	Gravelly loam	SC	A-6	0	0	70-80	55-75	45-55	35-45	30-35	10-15
	5-12	Gravelly clay loam, gravelly sandy clay loam	SC	A-6	0	0	75-85	55-75	45-60	35-45	35-40	15-20
	12-35	Gravelly sandy loam, gravelly sandy clay loam	SC-SM	A-2	0	0	60-75	50-70	35-50	20-35	20-30	5-10
	35-60	Very gravelly sand, very gravelly loamy sand, extremely gravelly sand	GP-GM, GP	A-1	0	0	40-50	20-35	10-25	0-10	---	NP
Desatoya-----	0-6	Very gravelly loam	GM-GC	A-2	0	0-10	50-60	40-50	35-45	25-35	20-30	5-10
	6-15	Gravelly clay loam, gravelly clay	GC	A-7	0	0-5	65-75	55-70	50-60	40-50	40-50	20-30
	15-60	Stratified extremely gravelly sandy loam to very gravelly loamy sand	GM	A-1	0	25-35	35-50	25-45	15-30	10-15	15-25	NP-5
Pineval-----	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
1026: Unsel-----	0-5	Very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0-5	15-30	40-70	35-60	30-50	15-35	20-25	5-10
	5-12	Gravelly clay loam, gravelly sandy clay loam	SC	A-6	0	0	75-85	55-75	45-60	35-45	35-40	15-20
	12-35	Gravelly sandy loam, gravelly sandy clay loam	SC-SM	A-2	0	0	60-75	50-70	35-50	20-35	20-30	5-10
	35-60	Very gravelly sand, very gravelly loamy sand, extremely gravelly sand	GP-GM, GP	A-1	0	0	40-50	20-35	10-25	0-10	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1026 (con.): Pineval-----	In											
	0-5	Gravelly loam	CL-ML, GM-GC	A-4	0	0	65-85	60-75	45-65	40-55	20-30	5-10
	5-17	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC	A-2	0	0	35-60	25-50	20-40	15-35	30-40	10-15
Defler-----	17-60	Stratified very gravelly sandy loam to extremely gravelly sand	GP-GM, GM	A-1	0	0-25	30-60	20-50	15-40	5-20	---	NP
	0-7	Gravelly fine sandy loam	GM, SM	A-2, A-4, A-1	0	0-5	55-80	50-75	40-60	20-40	15-25	NP-5
	7-44	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	GM	A-1, A-2	0	0-10	30-55	25-50	15-40	10-30	15-25	NP-5
	44-60	Stratified very gravelly sandy loam to extremely gravelly coarse sand	GP-GM, GM	A-1	0	0-10	25-40	20-35	10-20	5-15	---	NP
1027: Unsel-----	0-5	Very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0-5	15-30	40-70	35-60	30-50	15-35	20-25	5-10
	5-12	Gravelly clay loam, gravelly sandy clay loam	SC	A-6	0	0	75-85	55-75	45-60	35-45	35-40	15-20
	12-35	Gravelly sandy loam, gravelly sandy clay loam	SC-SM	A-2	0	0	60-75	50-70	35-50	20-35	20-30	5-10
	35-60	Very gravelly sand, very gravelly loamy sand, extremely gravelly sand	GP-GM, GP	A-1	0	0	40-50	20-35	10-25	0-10	---	NP
Roic-----	0-1	Very gravelly fine sandy loam	GM	A-1, A-2	0	0-5	40-60	30-50	20-40	15-30	20-25	NP-5
	1-6	Very fine sandy loam, fine sandy loam, loam	CL-ML, SC-SM, ML, SM	A-4	0	0	90-100	80-100	70-90	35-70	20-30	NP-10
	6-10	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1027 (con.): Annaw-----	In											
	0-4	Very gravelly loamy sand	GM, SM	A-1	0	0-25	40-60	35-50	25-35	10-15	---	NP
	4-12	Gravelly sandy loam, gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	0-15	50-85	45-75	30-60	15-35	---	NP
	12-60	Stratified extremely gravelly loamy coarse sand to very gravelly loamy sand	GM, GP-GM	A-1	0-5	0-25	20-55	20-45	10-20	5-15	---	NP
1030: Goldyke-----	0-1	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-85	55-70	30-50	15-30	20-25	NP-5
	1-4	Gravelly sandy loam, gravelly fine sandy loam	SC-SM, SM	A-2, A-1	0	0	60-80	50-75	40-65	10-35	20-30	NP-10
	4-21	Weathered bedrock			0	0	0	0	0	0	---	NP
	21-25	Unweathered bedrock			0	0	0	0	0	0	---	NP
Blacktop-----	0-5	Very gravelly sandy loam	GM	A-1	0	5-10	35-60	30-50	20-40	10-25	20-30	NP-5
	5-9	Unweathered bedrock			0	0	0	0	0	0	---	NP
Koyen-----	0-4	Fine sandy loam	SM	A-4	0	0	90-100	85-100	75-90	35-50	15-25	NP-5
	4-16	Sandy loam	SM	A-4	0	0	90-95	85-95	50-75	35-50	15-25	NP-5
	16-38	Stratified loam to gravelly loamy sand	SM	A-2, A-4	0	0	80-90	75-85	50-60	25-40	15-25	NP-5
	38-60	Gravelly loamy sand, very gravelly loamy sand	GP-GM, GM, SP-SM, SM	A-1	0	0	50-60	45-55	25-35	5-15	---	NP
1040: Terlco-----	0-5	Very gravelly fine sandy loam	GM	A-1	0	0-5	40-60	30-50	25-40	10-25	20-25	NP-5
	5-13	Gravelly clay loam, gravelly loam, gravelly sandy loam	CL, GC, SC	A-6, A-7	0	0-5	65-80	55-75	45-70	35-55	25-45	10-20
	13-19	Very gravelly sandy loam	GM	A-1	0-5	0-30	40-60	35-50	15-40	10-25	20-25	NP-5
	19-60	Very gravelly loamy sand, very gravelly sand, very cobbly loamy sand	SP-SM, SM, GP-GM, GM	A-1	0-5	0-40	45-70	35-50	10-30	5-15	---	NP



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1040 (con.): Annaw-----	0-4	Very gravelly loamy sand	GM, SM	A-1	0	0-25	40-60	35-50	25-35	10-15	---	NP
	4-12	Gravelly sandy loam, gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	0-15	50-85	45-75	30-60	15-35	---	NP
	12-60	Stratified extremely gravelly loamy coarse sand to very gravelly loamy sand	GM, GP-GM	A-1	0-5	0-25	20-55	20-45	10-20	5-15	---	NP
Izo-----	0-4	Very gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0-5	0-15	35-60	30-50	15-35	0-10	---	NP
	4-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM	A-1	0-5	0-15	20-40	15-35	10-20	0-10	---	NP
1050: Rock Outcrop.												
Ceejay-----	0-4	Very stony loam	SM, SC-SM, GM, GM-GC	A-2, A-4	5-25	10-20	60-85	50-80	40-60	30-50	25-35	5-10
	4-16	Gravelly clay loam, gravelly clay, cobbly clay loam	SC, GC	A-7	0-5	10-25	65-90	60-85	50-70	35-50	40-50	15-25
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Olac-----	0-3	Very stony sandy loam	GM, GM-GC, SM, SC-SM	A-1, A-2	5-25	20-25	55-75	50-70	35-55	15-35	20-30	NP-10
	3-13	Extremely gravelly clay loam, extremely gravelly loam	GC	A-2	5-10	10-20	30-45	20-35	15-30	10-25	30-40	15-20
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
1061: Olac-----	0-3	Very stony loam	GC	A-2	5-25	5-20	40-60	35-55	25-40	20-30	25-30	10-15
	3-13	Extremely gravelly clay loam, extremely gravelly loam	GC	A-2	5-10	10-20	30-45	20-35	15-30	10-25	30-40	15-20
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1061 (con.): Theon-----	In											
	0-3	Very stony loam	GM-GC, SC-SM	A-2, A-4	5-25	10-30	55-80	45-75	35-50	20-45	20-30	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Pirouette-----	0-4	Very stony very fine sandy loam	SM, SC-SM, GM, GM-GC	A-4	5-25	25-30	65-80	65-75	55-70	35-50	20-30	NP-10
	4-11	Very cobbly clay loam	SC, CL, GC	A-6, A-7	0-5	30-40	55-75	50-65	40-60	35-55	35-45	15-20
	11-12	Indurated			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
1062: Olac-----	0-3	Extremely stony loam	GC	A-2	25-40	15-25	40-60	35-55	25-40	20-30	25-30	10-15
	3-13	Extremely gravelly clay loam, extremely gravelly loam	GC	A-2	5-10	10-20	30-45	20-35	15-30	10-25	30-40	15-20
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-3	Very stony sandy loam	SM	A-1	5-15	15-40	60-70	55-65	35-45	15-25	15-25	NP-5
	3-13	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	10-35	10-30	40-55	35-50	30-45	25-40	30-40	15-25
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Ceejay-----	0-4	Very stony loam	SM, SC-SM, GM, GM-GC	A-2, A-4	5-25	10-20	60-85	50-80	40-60	30-50	25-35	5-10
	4-16	Gravelly clay loam, gravelly clay, cobbly clay loam	SC, GC	A-7	0-5	10-25	65-90	60-85	50-70	35-50	40-50	15-25
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1071: Ganaflan-----	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-65	35-50	20-25	NP-5
	5-21	Stratified loam to very gravelly loam	GM, SM, ML	A-4	0	0-5	60-96	50-90	45-75	35-60	20-25	NP-5
	21-32	Weathered bedrock			0	0	0	0	0	0	---	NP
	32-60	Stratified sand to very gravelly coarse sand	GP-GM, GM, SP-SM, SM	A-1	0	0-5	40-90	35-85	20-50	5-15	---	NP
Bluewing-----	0-5	Very gravelly sandy loam	GM	A-1	0	0-10	40-60	30-50	20-40	15-25	---	NP
	5-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP
Trocken-----	0-3	Very gravelly sandy loam	GM, SM	A-1	0	0-10	45-65	35-50	25-40	10-20	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
1090: Umberland-----	0-10	Silty clay loam	CL, ML	A-7	0	0	100	100	90-100	85-95	40-50	15-20
	10-60	Silty clay, silty clay loam, clay	CL, CH	A-7	0	0	100	100	95-100	85-95	40-55	20-30
Isolde-----	0-6	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	6-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
1100: Theon-----	0-3	Stony sandy loam	GM-GC	A-2	1-5	10-20	55-65	45-55	35-45	20-30	20-25	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Olac-----	0-3	Very stony sandy loam	GM, GM-GC, SM, SC-SM	A-1, A-2	5-25	20-25	55-75	50-70	35-55	15-35	20-30	NP-10
	3-13	Extremely gravelly clay loam, extremely gravelly loam	GC	A-2	5-10	10-20	30-45	20-35	15-30	10-25	30-40	15-20
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1101: Theon-----	In											
	0-3	Very stony fine sandy loam	GM-GC, SC-SM	A-2, A-4	5-25	10-30	55-80	45-75	35-50	20-45	20-30	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Theon-----	0-3	Very stony loam	GM-GC, SC-SM	A-2, A-4	5-25	10-30	55-80	45-75	35-50	20-45	20-30	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
1102: Theon-----	0-3	Stony sandy loam	GM-GC	A-2	1-5	10-20	55-65	45-55	35-45	20-30	20-25	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Theon-----	0-3	Very gravelly sandy loam	GM-GC, GM	A-2, A-1	0-1	5-10	40-60	30-50	20-45	15-35	20-30	NP-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-15	40-60	30-50	25-40	15-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
1104: Theon-----	0-3	Stony sandy loam	GM-GC	A-2	1-5	10-20	55-65	45-55	35-45	20-30	20-25	5-10
	3-12	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
	In											
1104 (con.): Roic-----	0-1	Very gravelly fine sandy loam	GM	A-1, A-2	0	0-5	40-60	30-50	20-40	15-30	20-25	NP-5
	1-6	Very fine sandy loam, fine sandy loam, loam	CL-ML, SC-SM, ML, SM	A-4	0	0	90-100	80-100	70-90	35-70	20-30	NP-10
	6-10	Weathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very gravelly sandy loam	SM	A-1	0	0-10	70-80	45-55	30-40	15-25	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
1120: Patna-----	0-7	Sand	SM	A-2	0	0	95-100	95-100	60-70	15-25	---	NP
	7-35	Sandy loam, fine sandy loam, coarse sandy loam	SC-SM	A-4	0	0	95-100	95-100	65-80	35-50	25-30	5-10
	35-50	Sand, loamy sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	50-60	5-20	---	NP
	50-60	Fine sand, loamy fine sand, loamy sand	SM	A-2	0	0	95-100	95-100	60-80	15-35	---	NP
Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP
Juva-----	0-6	Gravelly fine sandy loam	SM, GM	A-2	0	0-5	60-85	50-75	40-65	25-35	15-25	NP-5
	6-60	Stratified gravelly sand to silt loam	SM	A-2, A-1	0	0-5	90-100	75-95	45-60	20-35	20-35	NP-5
1121: Patna-----	0-7	Sand	SM	A-2	0	0	95-100	95-100	60-70	15-25	---	NP
	7-35	Sandy loam, fine sandy loam, coarse sandy loam	SC-SM	A-4	0	0	95-100	95-100	65-80	35-50	25-30	5-10
	35-50	Sand, loamy sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	50-60	5-20	---	NP
	50-60	Fine sand, loamy fine sand, loamy sand	SM	A-2	0	0	95-100	95-100	60-80	15-35	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1130: Malpais-----	In											
	0-3	Gravelly sandy loam	SM	A-1	0	0-10	70-85	60-75	35-50	15-25	15-25	NP-5
	3-15	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM	A-1, A-2	0-5	5-35	50-60	35-50	30-45	20-35	20-25	NP-5
	15-60	Extremely cobbly loam, very cobbly loam, extremely cobbly sandy loam	GM	A-1, A-2	0-5	40-50	40-55	35-50	25-35	20-30	20-25	NP-5
Malpais-----	0-3	Stony sandy loam	SM	A-1, A-2	1-5	10-20	70-90	65-85	40-55	20-35	15-25	NP-5
	3-15	Very gravelly loam, very cobbly fine sandy loam, very stony sandy loam	GM	A-1	5-40	15-50	30-40	25-35	20-30	10-20	20-30	NP-5
	15-60	Very stony loam, very cobbly fine sandy loam, extremely cobbly sandy loam	GM	A-1, A-2	5-40	15-50	45-55	35-50	25-45	20-30	20-30	NP-5
1140: Roic-----	0-1	Gravelly sandy loam	GM, SM	A-1, A-2	0	0-5	60-80	50-75	35-55	15-30	---	NP
	1-6	Very fine sandy loam, fine sandy loam, loam	CL-ML, SC-SM, ML, SM	A-4	0	0	90-100	80-100	70-90	35-70	20-30	NP-10
	6-10	Weathered bedrock			0	0	0	0	0	0	---	NP
Biddleman-----	0-3	Gravelly sandy loam	SM	A-1, A-2	0	5-10	70-80	60-70	40-55	20-35	20-25	NP-5
	3-10	Gravelly clay loam, gravelly loam, gravelly sandy clay loam	SC, GC	A-2, A-6	0	0-5	60-75	55-65	40-55	30-45	30-35	10-15
	10-60	Stratified extremely gravelly loamy fine sand to coarse sand	GP-GM, GP	A-1	0	5-15	10-30	10-20	5-10	0-10	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1140 (con.): Hooten-----	In											
	0-1	Very gravelly sand	SP, SP-SM	A-1	0	0	55-70	25-50	10-25	0-10	0-14	NP
	1-6	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC, SC	A-2, A-6	0	0	55-70	35-50	20-50	15-40	30-40	10-20
	6-12	Cemented			0	0	0	0	0	0	---	NP
	12-19	Stratified sand to extremely gravelly coarse sand	SP	A-1	0	0	60-80	50-70	30-40	0-5	0-14	NP
	19-60	Stratified sandy loam to silt loam	ML	A-4	0	0	100	90-100	70-80	50-60	0-14	NP
1142: Roic-----	0-1	Gravelly sandy loam	GM, SM	A-1, A-2	0	0-5	60-80	50-75	35-55	15-30	---	NP
	1-6	Very fine sandy loam, fine sandy loam, loam	CL-ML, SC-SM, ML, SM	A-4	0	0	90-100	80-100	70-90	35-70	20-30	NP-10
	6-10	Weathered bedrock			0	0	0	0	0	0	---	NP
Mazuma-----	0-9	Fine sandy loam	SM	A-2, A-4	0	0	95-100	85-100	70-85	30-50	20-25	NP-5
	9-60	Stratified gravelly coarse sand to silt loam	SM	A-4	0	0	95-100	75-100	70-90	35-50	20-25	NP-5
Celeton-----	0-2	Cobbly sandy loam	SM	A-2, A-5	0	25-35	75-85	75-85	50-60	25-40	40-50	NP-5
	2-7	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	7-14	Weathered bedrock			0	0	0	0	0	0	---	NP
1143: Roic-----	0-1	Gravelly sandy loam	GM, SM	A-1, A-2	0	0-5	60-80	50-75	35-55	15-30	---	NP
	1-6	Very fine sandy loam, fine sandy loam, loam	CL-ML, SC-SM, ML, SM	A-4	0	0	90-100	80-100	70-90	35-70	20-30	NP-10
	6-10	Weathered bedrock			0	0	0	0	0	0	---	NP
Trocken-----	0-3	Gravelly fine sandy loam	SM	A-1, A-2	0	0-10	65-85	50-75	40-60	20-30	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1143 (con.): Celeton-----	In				Pct	Pct					Pct	
	0-2	Cobbly sandy loam	SM	A-2, A-5	0	25-35	75-85	75-85	50-60	25-40	40-50	NP-5
	2-7	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	7-14	Weathered bedrock			0	0	0	0	0	0	---	NP
1144: Roic-----	0-1	Gravelly sandy loam	GM, SM	A-1, A-2	0	0-5	60-80	50-75	35-55	15-30	---	NP
	1-6	Very fine sandy loam, fine sandy loam, loam	CL-ML, SC-SM, ML, SM	A-4	0	0	90-100	80-100	70-90	35-70	20-30	NP-10
	6-10	Weathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very stony sandy loam	GM	A-1	5-25	15-25	40-60	35-55	20-35	10-20	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	GM	A-1, A-2	0-5	0-10	35-55	30-50	20-45	10-35	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
Celeton-----	0-3	Cobbly sandy loam	SM	A-2, A-5	0	25-35	75-85	75-85	50-60	25-40	40-50	NP-5
	3-11	Gravelly sandy loam, gravelly loam, loam	SM, ML, MH	A-5	0	0-5	75-95	65-95	50-85	35-65	40-60	NP-5
	11-15	Weathered bedrock			0	0	0	0	0	0	---	NP
1145: Roic-----	0-1	Very gravelly fine sandy loam	GM	A-1, A-2	0	0-5	40-60	30-50	20-40	15-30	20-25	NP-5
	1-6	Very fine sandy loam, fine sandy loam, loam	CL-ML, SC-SM, ML, SM	A-4	0	0	90-100	80-100	70-90	35-70	20-30	NP-10
	6-10	Weathered bedrock			0	0	0	0	0	0	---	NP
Patna-----	0-7	Sand	SM	A-2	0	0	95-100	95-100	60-70	15-25	---	NP
	7-35	Sandy loam, fine sandy loam, coarse sandy loam	SC-SM	A-4	0	0	95-100	95-100	65-80	35-50	25-30	5-10
	35-50	Sand, loamy sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	50-60	5-20	---	NP
	50-60	Fine sand, loamy fine sand, loamy sand	SM	A-2	0	0	95-100	95-100	60-80	15-35	---	NP



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1150: Phing-----	In											
	0-5	Cobbly sandy loam	SC-SM, SC	A-2	0	25-35	75-85	65-75	45-55	25-35	20-30	5-15
	5-35 35-60	Clay Loam, clay, gravelly clay loam	CH CH, CL	A-7 A-7, A-6	0 0	0-5 0-5	100 80-100	90-100 70-95	80-90 65-85	70-80 60-80	60-75 30-55	35-50 15-30
Buffaran-----	0-7 7-15	Very stony loam Gravelly clay loam, gravelly clay, clay	SC, CL CL, CH	A-6 A-7	5-15 0	5-25 0-5	75-90 75-90	75-85 70-85	50-75 65-80	40-60 50-65	25-35 40-55	10-15 20-30
	15-60	Indurated			0	0	0	0	0	0	---	NP
1160: Sojur-----	0-7	Extremely channery silt loam	GM-GC	A-2	0	15-30	40-50	20-30	15-25	10-20	25-30	5-10
	7-11	Unweathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very gravelly sandy loam	SM	A-1	0	0-10	70-80	45-55	30-40	15-25	15-25	NP-5
	4-10	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
1171: Tocan-----	0-4 4-16	Sandy loam Gravelly loam, gravelly sandy clay loam, sandy clay loam	SM SC	A-2, A-4 A-6	0 0	0 0	90-100 75-100	85-100 70-100	55-70 55-70	25-40 35-50	15-25 30-40	NP-5 10-15
	16-60	Stratified loam to very gravelly sand	SP-SM, SM	A-1	0	0	65-80	55-70	30-45	5-20	---	NP
Aboten-----	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	35-55	30-50	20-40	15-25	15-25	NP-5
	5-13	Clay loam, loam	ML, CL	A-6	0	0-10	80-100	75-90	70-90	50-70	35-40	10-15
	13-21	Cemented			0	0	0	0	0	0	---	NP
	21-60	Extremely gravelly sandy loam, very gravelly loamy sand	GP-GM, GM	A-1	0	0-15	25-40	20-35	10-20	5-15	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1180: Jerval-----	In											
	0-4	Gravelly very fine sandy loam	SM	A-4	0	0-10	70-85	55-75	50-75	35-50	---	NP
	4-18	Gravelly clay loam, gravelly silty clay loam	CL	A-6	0	0-5	65-85	60-75	55-75	50-65	35-40	15-20
	18-60	Very gravelly sandy loam, very gravelly fine sandy loam	GM	A-1	0	0-10	45-60	35-50	25-45	15-25	---	NP
Trocken-----	0-3	Very gravelly sandy loam	GM, SM	A-1	0	0-10	45-65	35-50	25-40	10-20	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
1200: Arclay-----	0-4	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	4-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-40	Weathered bedrock			0	0	0	0	0	0	---	NP
	40-44	Unweathered bedrock			0	0	0	0	0	0	---	NP
1210: Biga-----	0-3	Gravelly coarse sandy loam	SM	A-1, A-2	0	0-5	85-100	55-75	25-45	15-35	---	NP
	3-13	Clay, sandy clay, clay loam	SC, CL	A-7	0	0	95-100	75-100	65-85	45-65	40-50	15-25
	13-60	Stratified sandy loam to gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	80-100	60-90	20-40	15-30	---	NP
Granshaw-----	0-3	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	3-24	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	24-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1210 (con.): Labkey-----	In											
	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP
1211: Biga-----	0-3	Gravelly coarse sandy loam	SM	A-1, A-2	0	0-5	85-100	55-75	25-45	15-35	---	NP
	3-13	Clay, sandy clay, clay loam	SC, CL	A-7	0	0	95-100	75-100	65-85	45-65	40-50	15-25
	13-60	Stratified sandy loam to gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	80-100	60-90	20-40	15-30	---	NP
1212: Biga-----	0-3	Gravelly coarse sandy loam	SM	A-1, A-2	0	0-5	85-100	55-75	25-45	15-35	---	NP
	3-13	Clay, sandy clay, clay loam	SC, CL	A-7	0	0	95-100	75-100	65-85	45-65	40-50	15-25
	13-60	Stratified sandy loam to gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	80-100	60-90	20-40	15-30	---	NP
Roic-----	0-1	Very gravelly fine sandy loam	GM	A-1, A-2	0	0-5	40-60	30-50	20-40	15-30	20-25	NP-5
	1-6	Very fine sandy loam, fine sandy loam, loam	CL-ML, SC-SM, ML, SM	A-4	0	0	90-100	80-100	70-90	35-70	20-30	NP-10
	6-10	Weathered bedrock			0	0	0	0	0	0	---	NP
Labkey-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1220: Labkey-----	In											
	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP
1230: Genegraf-----	0-6	Very gravelly very fine sandy loam	GM	A-1, A-2	0	0-10	30-50	25-45	25-45	15-30	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0	0-10	45-60	35-50	25-45	10-25	15-25	NP-5
Bluewing-----	0-5	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	20-35	---	NP
	5-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP
Dorper-----	0-2	Very gravelly sandy loam	GM	A-1, A-2	0-1	0-10	50-65	35-50	25-40	20-30	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1231: Genegraf-----	In											
	0-6	Very gravelly very fine sandy loam	GM	A-1, A-2	0	0-10	30-50	25-45	25-45	15-30	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0	0-10	45-60	35-50	25-45	10-25	15-25	NP-5
Trocken-----	0-3	Very gravelly very fine sandy loam	GM, GM-GC	A-1, A-2	0	0-25	40-55	35-50	30-50	10-35	15-30	NP-10
	3-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10
Bluewing-----	0-7	Very gravelly loamy sand	GP-GM	A-1	0	0-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	10-25	30-40	25-35	15-25	5-10	---	NP
1232: Genegraf-----	0-6	Gravelly fine sandy loam	GM, SM	A-2, A-4	0	0-5	60-80	55-70	45-60	30-45	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0-1	0-10	45-65	35-55	25-50	10-25	0-14	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth  In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit  Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1232 (con.): Rednik-----	0-5	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	5-16	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	16-21	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	21-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP
Trocken-----	0-3	Very gravelly sandy loam	GM, SM	A-1	0	0-10	45-65	35-50	25-40	10-20	20-25	NP-5
	3-60	Stratified gravelly loam to extremely gravelly loamy coarse sand	GM, SM	A-1	0	0-15	35-70	20-50	15-40	10-20	20-25	NP-5
1233: Genegraf-----	0-6	Gravelly sandy loam	SM	A-1, A-2	0	0-5	60-80	55-70	30-45	20-35	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0-1	0-10	45-65	35-55	25-50	10-25	0-14	NP
Buckaroo-----	0-4	Very gravelly very fine sandy loam	GM	A-1, A-2	0-1	0-5	45-60	30-45	25-40	15-30	15-25	NP-5
	4-16	Clay, clay loam	CL, CH	A-7	0	0-5	90-100	85-100	75-90	65-80	40-55	15-30
	16-60	Very gravelly sandy loam	GM	A-1	0-2	0-15	45-60	30-45	20-35	10-25	15-25	NP-5

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1233 (con.): Bluewing-----	In											
	0-7	Very gravelly loamy sand	GP-GM	A-1	0	0-15	30-40	25-35	15-25	5-10	---	NP
	7-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	10-25	30-40	25-35	15-25	5-10	---	NP
1280: Soar-----	0-2	Very gravelly coarse sandy loam	SP-SM, SM, SC-SM, SP-SC	A-1, A-2	0-2	0-10	90-95	35-50	15-35	5-20	20-30	NP-10
	2-10	Very gravelly sandy clay loam, very gravelly loam	SC	A-2	0-2	0-10	90-95	25-50	15-40	10-25	30-35	10-15
	10-24	Weathered bedrock			0	0	0	0	0	0	---	NP
	24-28	Unweathered bedrock			0	0	0	0	0	0	---	NP
Arclay-----	0-4	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	4-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-40	Weathered bedrock			0	0	0	0	0	0	---	NP
	40-44	Unweathered bedrock			0	0	0	0	0	0	---	NP
Soar-----	0-2	Very gravelly coarse sandy loam	SP-SM, SM, SC-SM, SP-SC	A-1, A-2	0-2	0-10	90-95	35-50	15-35	5-20	20-30	NP-10
	2-10	Very gravelly sandy clay loam, very gravelly loam	SC	A-2	0-2	0-10	90-95	25-50	15-40	10-25	30-35	10-15
	10-24	Weathered bedrock			0	0	0	0	0	0	---	NP
	24-28	Unweathered bedrock			0	0	0	0	0	0	---	NP
1290: Slocave-----	0-1	Very gravelly coarse sandy loam	SM	A-1	0-2	0-10	70-85	30-50	15-30	10-20	15-20	NP-5
	1-5	Very gravelly sandy loam, very gravelly coarse sandy loam	SM	A-1	0	0	75-90	25-50	15-35	10-25	15-25	NP-5
	5-22	Weathered bedrock			0	0	0	0	0	0	---	NP
	22-26	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct					Pct	
1290 (con.): Vium-----	In											
	0-2	Gravelly coarse sandy loam	SM	A-1, A-2	0	0-10	85-100	55-70	30-50	15-35	---	NP
	2-8	Very gravelly sandy loam, very gravelly coarse sandy loam	SM	A-1	0	0	60-90	25-45	15-30	10-25	20-25	NP-5
	8-12	Unweathered bedrock			0	0	0	0	0	0	---	NP
1300: Lovelock-----	0-10	Silt loam	OL, OH	A-5, A-7, A-8	0	0	100	100	100	95-100	40-60	5-20
	10-60	Stratified clay to silt loam	CH, MH	A-7	0	0	100	100	100	95-100	55-75	25-45
1301: Lovelock-----	0-10	Silt loam	OL, OH	A-5, A-7, A-8	0	0	100	100	100	95-100	40-60	5-20
	10-60	Stratified clay to silt loam	CH, MH	A-7	0	0	100	100	100	95-100	55-75	25-45
1320: Gardella-----	0-2	Gravelly silt loam	GM, ML	A-4	0	0-5	60-80	50-75	45-70	35-60	30-40	NP-10
	2-9	Stratified coarse sand to gravelly coarse sandy loam	SM	A-1	0	0	85-95	50-80	20-40	10-20	---	NP
	9-23	Cemented			0	0	0	0	0	0	---	NP
	23-60	Silty clay	CH	A-7	0	0	100	100	95-100	90-100	50-60	25-35
1330: Parran-----	0-8	Silty clay	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
	8-22	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
	22-60	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
1331: Parran-----	0-8	Silty clay	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
	8-22	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
	22-60	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
Hawsley-----	0-10	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	10-22	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
	22-60	Sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-90	5-25	---	NP



TABLE 12.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1332: Parran-----	In											
	0-8	Silty clay loam	CL	A-7	0	0	100	100	95-100	85-100	40-45	15-20
	8-22	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
	22-60	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-60	20-30
Umberland-----	0-10	Silty clay loam	CL, ML	A-7	0	0	100	100	90-100	85-95	40-50	15-20
	10-60	Silty clay, silty clay loam, clay	CL, CH	A-7	0	0	100	100	95-100	85-95	40-55	20-30
1340: Inmo-----	0-8	Very gravelly loamy sand	SM	A-1	0	0-5	65-75	30-50	20-30	10-20	---	NP
	8-40	Stratified extremely gravelly coarse sand to very gravelly loamy sand	SP, SP-SM	A-1	0	0-5	75-85	20-35	10-25	0-10	---	NP
	40-60	Very gravelly loamy coarse sand	SM	A-1	0	0-5	80-90	40-55	25-40	10-15	---	NP
Inmo-----	0-8	Very gravelly loamy sand	SM	A-1	0	0-5	65-75	30-50	20-30	10-15	---	NP
	8-40	Stratified extremely gravelly coarse sand to very gravelly loamy sand	SP, SP-SM	A-1	0	0-5	60-85	20-35	10-25	0-10	---	NP
	40-60	Very gravelly loamy coarse sand	SM	A-1	0	0-5	80-90	40-55	25-40	10-15	---	NP



TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodability index" apply only to the surface layer)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
100: Rock Outcrop.												
Budihol-----	0-3	12-18	1.25-1.40	2.00-6.00	0.07-0.09	Low	1.0-2.0	0.20	0.32	2	4	86
	3-7	12-18	1.20-1.40	2.00-6.00	0.07-0.09	Low	0.5-1.0	0.20	0.32			
	7-21	---	---	0.00-20.00	---		---	---	---			
	21-25	---	---	0.00-0.01	---		---	---	---			
Chill-----	0-4	5-10	1.35-1.50	2.00-6.00	0.08-0.11	Low	0.6-2.0	0.17	0.32	2	4	86
	4-8	25-35	1.30-1.50	0.20-0.60	0.10-0.13	Moderate	0.5-1.0	0.15	0.28			
	8-22	---	---	0.00-20.00	---		---	---	---			
102: Rock Outcrop.												
Budihol-----	0-3	12-18	1.25-1.40	2.00-6.00	0.07-0.09	Low	1.0-2.0	0.20	0.32	2	4	86
	3-7	12-18	1.20-1.40	2.00-6.00	0.07-0.09	Low	0.5-1.0	0.20	0.32			
	7-21	---	---	0.00-20.00	---		---	---	---			
	21-25	---	---	0.00-0.01	---		---	---	---			
Minneha-----	0-12	10-20	1.30-1.50	0.60-2.00	0.11-0.13	Low	1.0-3.0	0.17	0.37	2	7	38
	12-16	6-15	1.35-1.55	2.00-6.00	0.05-0.07	Low	0.8-2.0	0.10	0.32			
	16-20	---	---	0.00-20.00	---		---	---	---			
110: Bimmer-----	0-5	10-18	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.24	0.43	1	4	86
	5-21	---	---	0.00-20.00	---		---	---	---			
	21-31	---	---	0.00-0.01	---		---	---	---			
Chill-----	0-4	5-10	1.35-1.50	2.00-6.00	0.08-0.11	Low	0.6-2.0	0.17	0.32	2	4	86
	4-8	25-35	1.30-1.50	0.20-0.60	0.10-0.13	Moderate	0.5-1.0	0.15	0.28			
	8-22	---	---	0.00-20.00	---		---	---	---			
120: Rock Outcrop.												
Nemico-----	0-3	5-10	1.45-1.60	2.00-6.00	0.08-0.10	Low	0.0-0.5	0.17	0.32	1	5	56
	3-12	35-45	1.40-1.60	0.00-0.06	0.13-0.14	High	0.0-0.5	0.15	0.24			
	12-15	10-15	1.55-1.75	0.06-2.00	0.12-0.13	Low	0.0-0.5	0.17	0.32			
	15-16	---	---	0.00-0.01	---		---	---	---			
	16-20	---	---	0.00-0.01	---		---	---	---			
Mirkwood-----	0-2	10-18	1.45-1.60	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.15	0.43	1	8	---
	2-11	25-35	1.30-1.50	0.20-0.60	0.10-0.13	Moderate	0.0-0.5	0.28	0.43			
	11-21	---	---	0.00-0.01	---		---	---	---			
130: Bedzee-----	0-7	20-27	1.15-1.30	0.60-2.00	0.12-0.14	Moderate	1.0-2.0	0.43	0.55	2	7	38
	7-17	40-60	1.15-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.28	0.49			
	17-21	---	---	0.00-0.01	---		---	---	---			
Loomer-----	0-7	15-25	1.10-1.25	0.60-2.00	0.12-0.14	Low	1.0-2.0	0.17	0.32	1	6	48
	7-17	35-50	1.30-1.45	0.06-0.20	0.08-0.10	Moderate	0.5-2.0	0.05	0.43			
	17-21	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
130 (con.): Bedwyr-----	0-2	18-27	1.15-1.35	0.20-0.60	0.12-0.15	Low	0.0-0.7	0.20	0.43	2	7	38
	2-10	45-55	1.20-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.32	0.32			
	10-13	45-60	1.15-1.35	0.00-0.06	0.11-0.13	High	0.0-0.5	0.20	0.32			
	13-23	---	---	0.00-0.01	---		---	---	---			
140: Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
141: Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17			
142: Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
Appian-----	0-6	2-5	1.50-1.65	6.00-20.00	0.06-0.08	Low	0.0-0.5	0.20	0.20	3	2	134
	6-12	27-35	1.45-1.65	0.20-0.60	0.17-0.20	Moderate	0.0-0.5	0.32	0.32			
	12-16	2-5	1.45-1.65	2.00-6.00	0.05-0.09	Low	0.0-0.5	0.17	0.24			
	16-60	0-5	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.15			
Ruhe-----	0-4	0-5	1.50-1.65	6.00-20.00	0.04-0.09	Low	0.0-0.5	0.10	0.20	2	3	86
	4-18	0-5	1.55-1.75	6.00-20.00	0.04-0.09	Low	0.0-0.5	0.10	0.20			
	18-28	---	---	0.00-0.01	---		---	---	---			
	28-60	0-5	1.55-1.75	6.00-20.00	0.01-0.03	Low	0.0-0.5	0.10	0.20			
143: Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
Gamgee-----	0-3	6-10	1.40-1.60	6.00-20.00	0.06-0.09	Low	0.5-1.0	0.10	0.32	5	4	86
	3-24	25-35	1.30-1.50	0.06-0.20	0.13-0.15	Moderate	0.0-0.5	0.43	0.49			
	24-55	10-20	1.40-1.60	0.20-0.60	0.08-0.10	Low	0.0-0.5	0.37	0.49			
	55-60	27-35	1.30-1.50	0.06-0.20	0.13-0.15	Moderate	0.0-0.5	0.37	0.43			
144: Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
Theon-----	0-3	10-20	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.05	0.32	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.15	0.55			
	12-16	---	---	0.00-0.01	---		---	---	---			
Pirouette-----	0-4	10-18	1.40-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.15	0.32	1	8	---
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
146:												
Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
Juva-----	0-6	10-20	1.30-1.45	0.60-2.00	0.15-0.17	Low	0.5-1.0	0.37	0.37	5	4L	86
	6-60	5-15	1.40-1.55	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.20	0.24			
147:												
Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
Celeton-----	0-2	8-15	0.85-1.10	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.32	1	4	86
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---		---	---	---			
Bluewing-----	0-5	6-10	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.24	0.32	5	4	86
	5-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			
150:												
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.06-0.09	Low	0.0-0.5	0.10	0.32	2	4	86
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			
Bluewing-----	0-7	3-8	1.40-1.60	6.00-20.00	0.04-0.06	Low	0.3-0.5	0.10	0.24	5	4	86
	7-60	3-8	1.45-1.65	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
152:												
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.06-0.09	Low	0.0-0.5	0.10	0.32	2	4	86
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			
Watoopah-----	0-2	1-5	1.50-1.65	>20.00	0.03-0.06	Low	0.5-1.0	0.24	0.24	3	1	220
	2-16	10-18	1.35-1.55	2.00-6.00	0.09-0.14	Low	0.5-1.0	0.10	0.32			
	16-29	0-5	1.50-1.65	2.00-6.00	0.03-0.12	Low	0.0-0.5	0.05	0.28			
	29-60	0-5	1.50-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.20			
Rezave-----	0-3	12-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.24	0.37	1	5	56
	3-9	35-55	1.20-1.40	0.06-0.20	0.12-0.15	High	0.0-0.5	0.24	0.37			
	9-15	35-45	1.35-1.50	0.20-0.60	0.09-0.12	Moderate	0.0-0.5	0.15	0.32			
	15-19	---	---	0.00-0.01	---		---	---	---			
153:												
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.08-0.11	Low	0.0-0.5	0.15	0.49	2	5	56
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
Bluewing-----	0-7	3-10	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24	5	4	86
	7-60	3-10	1.55-1.75	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
154:												
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.08-0.11	Low	0.0-0.5	0.15	0.49	2	5	56
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
154 (con.):												
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.11-0.14	Low	0.0-0.5	0.28	0.55	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.28			
155:												
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.08-0.11	Low	0.0-0.5	0.15	0.49	2	5	56
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			
Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.06-0.07	Low	0.0-0.5	0.15	0.32	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.32			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
158:												
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.08-0.11	Low	0.0-0.5	0.15	0.49	2	5	56
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			
Celeton-----	0-2	8-15	0.85-1.10	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.49	1	6	48
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---	---	---	---	---			
Wholan-----	0-6	5-15	1.35-1.50	0.60-2.00	0.15-0.17	Low	0.0-0.5	0.55	0.55	4	3	86
	6-45	5-15	1.35-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.55	0.55			
	45-60	2-10	1.40-1.60	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.37			
159:												
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.06-0.09	Low	0.0-0.5	0.05	0.24	2	8	---
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			
Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.06-0.07	Low	0.0-0.5	0.15	0.32	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.32			
160:												
Rock Outcrop.												
Singatse-----	0-4	7-15	1.40-1.60	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.17	0.43	1	6	48
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---	---	---	---	---			
161:												
Rock Outcrop.												
Singatse-----	0-4	7-15	1.40-1.60	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.17	0.43	1	6	48
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---	---	---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
161 (con.): Uripnes-----	0-4	10-18	1.40-1.55	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.17	0.32	1	5	56
	4-21	---	---	0.00-20.00	---		---	---	---			
	21-25	---	---	0.00-20.00	---		---	---	---			
162: Singatse-----	0-4	7-15	1.40-1.60	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.17	0.43	1	6	48
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---		---	---	---			
Theon-----	0-3	10-20	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.05	0.32	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.15	0.55			
	12-16	---	---	0.00-0.01	---		---	---	---			
Rezave-----	0-3	12-18	1.40-1.55	0.06-0.20	0.11-0.13	Low	0.0-0.5	0.43	0.43	1	6	48
	3-9	35-55	1.20-1.40	0.06-0.20	0.12-0.15	High	0.0-0.5	0.24	0.37			
	9-15	35-45	1.35-1.50	0.20-0.60	0.09-0.12	Moderate	0.0-0.5	0.15	0.32			
	15-19	---	---	0.00-0.01	---		---	---	---			
164: Singatse-----	0-4	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.28	1	5	56
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---		---	---	---			
Loomer-----	0-7	15-25	1.10-1.25	0.60-2.00	0.12-0.14	Low	1.0-2.0	0.17	0.32	1	6	48
	7-17	35-50	1.30-1.45	0.06-0.20	0.08-0.10	Moderate	0.5-2.0	0.05	0.43			
	17-21	---	---	0.00-0.01	---		---	---	---			
170: Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17			
Dune Land-----	0-6	0-1	1.50-1.60	6.00-20.00	0.04-0.05	Low	0.0-0.1	0.15	0.20	5	1	220
	6-60	0-1	1.50-1.60	6.00-20.00	0.03-0.05	Low	0.0-0.1	0.10	0.20			
Pirouette-----	0-4	5-10	1.50-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.24	1	4	86
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			
171: Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.28	0.28	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.24	0.24			
Parran-----	0-8	40-55	1.20-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.37	0.37	5	4	86
	8-22	35-55	1.25-1.45	0.00-0.06	0.14-0.16	High	0.0-0.5	0.37	0.37			
	22-60	35-55	1.25-1.45	0.00-0.06	0.14-0.16	High	0.0-0.2	0.37	0.37			
Appian-----	0-4	0-5	1.35-1.50	6.00-20.00	0.05-0.07	Low	0.0-0.5	0.24	0.24	4	1	250
	4-12	27-35	1.35-1.50	0.20-0.60	0.14-0.21	Moderate	0.0-0.5	0.32	0.32			
	12-46	0-5	1.50-1.70	6.00-20.00	0.05-0.09	Low	0.0-0.5	0.17	0.24			
	46-60	40-60	1.60-1.80	0.06-0.20	0.14-0.17	High	0.0-0.5	0.28	0.28			
172: Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17			
Pirouette-----	0-4	5-10	1.50-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.24	1	4	86
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
172 (con.): Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
173: Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.28	0.28	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.24	0.24			
174: Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.28	0.28	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.24	0.24			
Ragtown-----	0-6	12-24	1.30-1.50	0.60-2.00	0.19-0.21	Moderate	0.0-0.5	0.55	0.55	5	4L	86
	6-23	28-35	1.40-1.55	0.20-0.60	0.17-0.19	Moderate	0.0-0.5	0.28	0.28			
	23-60	35-45	1.40-1.60	0.06-0.20	0.14-0.18	High	0.0-0.5	0.32	0.32			
180: Bluewing-----	0-7	3-8	1.40-1.60	6.00-20.00	0.04-0.06	Low	0.3-0.5	0.10	0.24	5	4	86
	7-60	3-8	1.45-1.65	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
Inmo-----	0-8	8-15	1.35-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.15	0.28	5	4	86
	8-40	2-8	1.50-1.65	>20.00	0.02-0.04	Low	0.0-0.5	0.05	0.24			
	40-60	5-10	1.55-1.70	>20.00	0.04-0.07	Low	0.0-0.5	0.05	0.15			
181: Bluewing-----	0-7	3-10	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24	5	4	86
	7-60	3-10	1.55-1.75	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
184: Bluewing-----	0-7	3-10	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24	5	4	86
	7-60	3-10	1.55-1.75	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
Bluewing-----	0-7	3-8	1.40-1.60	6.00-20.00	0.04-0.06	Low	0.3-0.5	0.10	0.24	5	4	86
	7-60	3-8	1.45-1.65	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.08-0.11	Low	1.0-2.0	0.15	0.49	5	7	38
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.5-0.8	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
185: Rock Outcrop.												
Bluewing-----	0-7	6-10	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.24	0.32	5	4	86
	7-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			
Toulon-----	0-2	10-12	1.45-1.65	2.00-6.00	0.06-0.10	Low	0.0-0.5	0.28	0.43	3	7	38
	2-16	12-15	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.43			
	16-60	0-3	1.50-1.65	>20.00	0.03-0.06	Low	0.0-0.5	0.05	0.15			
186: Bluewing-----	0-5	6-10	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.24	0.32	5	4	86
	5-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			
Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			



TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
190:												
Theon-----	0-3	10-20	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.05	0.32	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.15	0.55			
	12-16	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	10-20	1.30-1.45	0.60-2.00	0.08-0.12	Low	1.0-2.0	0.17	0.43	1	8	---
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
191:												
Rock Outcrop.												
Theon-----	0-3	12-18	1.40-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.17	0.32	1	4	86
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
Singatse-----	0-4	7-15	1.40-1.60	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.17	0.43	1	7	38
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---		---	---	---			
192:												
Theon-----	0-3	10-20	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.05	0.32	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.15	0.55			
	12-16	---	---	0.00-0.01	---		---	---	---			
193:												
Rock Outcrop.												
Theon-----	0-3	12-18	1.40-1.55	2.00-6.00	0.07-0.09	Low	---	0.17	0.32	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	---	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
Mirkwood-----	0-2	10-18	1.45-1.60	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.15	0.43	1	8	---
	2-11	25-35	1.30-1.50	0.20-0.60	0.10-0.13	Moderate	0.0-0.5	0.28	0.43			
	11-21	---	---	0.00-0.01	---		---	---	---			
194:												
Theon-----	0-3	12-20	1.40-1.55	0.60-2.00	0.04-0.09	Low	0.0-0.5	0.10	0.37	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
Hooplite-----	0-4	12-20	1.35-1.50	2.00-6.00	0.06-0.09	Low	0.6-2.0	0.15	0.32	1	5	56
	4-8	22-30	1.30-1.50	0.60-2.00	0.08-0.11	Low	0.5-1.0	0.15	0.49			
	8-18	---	---	0.00-0.01	---		---	---	---			
Singatse-----	0-4	5-15	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.4-0.6	0.10	0.32	1	5	56
	4-10	5-15	1.40-1.60	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.10	0.37			
	10-14	---	---	0.00-0.01	---		---	---	---			
199:												
Theon-----	0-3	12-20	1.40-1.55	0.60-2.00	0.04-0.09	Low	0.0-0.5	0.10	0.37	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
Oiac-----	0-3	15-22	1.35-1.50	0.60-2.00	0.07-0.09	Low	1.0-2.0	0.10	0.43	1	8	---
	3-13	23-30	1.25-1.45	0.60-2.00	0.05-0.07	Low	0.5-1.0	0.05	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
Singatse-----	0-4	10-15	1.40-1.60	0.60-2.00	0.08-0.10	Low	0.4-0.6	0.10	0.43	1	7	38
	4-10	5-15	1.40-1.60	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.10	0.37			
	10-14	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
200: Rock Outcrop.												
Pirouette-----	0-4	10-18	1.40-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.24	0.64	1	5	56
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			
Osobb-----	0-3	12-18	1.35-1.50	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.05	0.32	1	8	---
	3-17	12-18	1.35-1.50	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.15	0.32			
	17-18	---	---	0.00-0.01	---		---	---	---			
	18-22	---	---	0.00-0.01	---		---	---	---			
201:												
Pirouette-----	0-4	10-18	1.40-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.24	0.64	1	5	56
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			
Osobb-----	0-3	12-18	1.35-1.50	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.05	0.32	1	8	---
	3-17	12-18	1.35-1.50	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.15	0.32			
	17-18	---	---	0.00-0.01	---		---	---	---			
	18-22	---	---	0.00-0.01	---		---	---	---			
Celeton-----	0-2	5-15	0.90-1.10	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.10	0.32	1	5	56
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---		---	---	---			
203:												
Pirouette-----	0-4	10-18	1.40-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.24	0.64	1	5	56
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			
Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
204:												
Pirouette-----	0-4	10-18	1.40-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.24	0.64	1	5	56
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			
Osobb-----	0-3	12-18	1.30-1.45	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.17	0.64	1	5	56
	3-17	12-18	1.35-1.50	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.15	0.32			
	17-18	---	---	0.00-0.01	---		---	---	---			
	18-22	---	---	0.00-0.01	---		---	---	---			
Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17			
206:												
Pirouette-----	0-4	10-18	1.40-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.24	0.64	1	5	56
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
206 (con.):												
Osobb-----	0-3	12-18	1.30-1.45	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.17	0.64	1	5	56
	3-17	12-18	1.35-1.50	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.15	0.32			
	17-18	---	---	0.00-0.01	---		---	---	---			
	18-22	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	5-15	1.35-1.50	2.00-6.00	0.07-0.09	Low	1.0-2.0	0.20	0.32	1	4	86
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
207:												
Pirouette-----	0-4	10-18	1.40-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.24	0.64	1	5	56
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			
Rezave-----	0-3	12-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.24	0.37	1	5	56
	3-9	35-55	1.20-1.40	0.06-0.20	0.12-0.15	High	0.0-0.5	0.24	0.37			
	9-15	35-45	1.35-1.50	0.20-0.60	0.09-0.12	Moderate	0.0-0.5	0.15	0.32			
	15-19	---	---	0.00-0.01	---		---	---	---			
Osobb-----	0-3	12-18	1.30-1.45	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.17	0.64	1	5	56
	3-17	12-18	1.35-1.50	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.15	0.32			
	17-18	---	---	0.00-0.01	---		---	---	---			
	18-22	---	---	0.00-0.01	---		---	---	---			
208:												
Pirouette-----	0-4	10-18	1.40-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.24	0.64	1	5	56
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			
Theon-----	0-3	12-18	1.40-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.17	0.32	1	4	86
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
Rubble Land----	0-60	---	1.70-2.35	>20.00	0.00-0.10	Low	0.0-0.1	---	---	---	8	---
210:												
Biddleman-----	0-3	8-15	1.40-1.55	2.00-6.00	0.08-0.11	Low	0.0-0.5	0.32	0.37	5	4	86
	3-10	20-30	1.35-1.50	0.20-0.60	0.12-0.14	Moderate	0.0-0.5	0.20	0.37			
	10-60	2-10	1.40-1.60	>20.00	0.03-0.05	Low	0.0-0.5	0.10	0.15			
Biddleman-----	0-3	8-15	1.35-1.55	6.00-20.00	0.08-0.11	Low	0.0-0.5	0.32	0.37	5	5	56
	3-10	20-30	1.35-1.55	0.20-0.60	0.12-0.14	Moderate	0.0-0.5	0.17	0.32			
	10-60	2-10	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.10	0.15			
211:												
Biddleman-----	0-1	8-15	1.40-1.55	2.00-6.00	0.08-0.11	Low	0.0-0.5	0.32	0.37	2	4	86
	1-4	20-27	1.35-1.50	0.20-0.60	0.12-0.14	Moderate	0.0-0.5	0.17	0.32			
	4-60	2-10	1.40-1.60	>20.00	0.03-0.05	Low	0.0-0.5	0.10	0.64			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.37	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
Biddleman-----	0-3	8-15	1.35-1.55	6.00-20.00	0.08-0.11	Low	0.0-0.5	0.32	0.37	5	5	56
	3-10	20-30	1.35-1.55	0.20-0.60	0.12-0.14	Moderate	0.0-0.5	0.17	0.32			
	10-60	2-10	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.10	0.15			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
213:												
Biddleman-----	0-3	8-15	1.35-1.55	6.00-20.00	0.08-0.11	Low	0.0-0.5	0.32	0.37	5	5	56
	3-10	20-30	1.35-1.55	0.20-0.60	0.12-0.14	Moderate	0.0-0.5	0.17	0.32			
	10-60	2-10	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.10	0.15			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43	5	5	56
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
214:												
Biddleman-----	0-3	8-15	1.40-1.55	2.00-6.00	0.08-0.11	Low	0.0-0.5	0.32	0.37	5	4	86
	3-10	20-30	1.35-1.50	0.20-0.60	0.12-0.14	Moderate	0.0-0.5	0.20	0.37			
	10-60	2-10	1.40-1.60	>20.00	0.03-0.05	Low	0.0-0.5	0.10	0.15			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43	5	5	56
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
Ruhe-----	0-4	0-5	1.50-1.65	6.00-20.00	0.04-0.09	Low	0.0-0.5	0.10	0.20	2	3	86
	4-18	0-5	1.55-1.75	6.00-20.00	0.04-0.09	Low	0.0-0.5	0.10	0.20			
	18-28	---	---	0.00-0.01	---	---	---	---	---			
	28-60	0-5	1.55-1.75	6.00-20.00	0.01-0.03	Low	0.0-0.5	0.10	0.20			
215:												
Biddleman-----	0-3	8-15	1.35-1.55	6.00-20.00	0.08-0.11	Low	0.0-0.5	0.32	0.37	5	5	56
	3-10	20-30	1.35-1.55	0.20-0.60	0.12-0.14	Moderate	0.0-0.5	0.17	0.32			
	10-60	2-10	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.10	0.15			
Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17			
216:												
Biddleman-----	0-3	8-15	1.40-1.55	2.00-6.00	0.08-0.11	Low	0.0-0.5	0.32	0.37	5	4	86
	3-10	20-30	1.35-1.50	0.20-0.60	0.12-0.14	Moderate	0.0-0.5	0.20	0.37			
	10-60	2-10	1.40-1.60	>20.00	0.03-0.05	Low	0.0-0.5	0.10	0.15			
Bluewing-----	0-5	6-10	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.24	0.32	5	4	86
	5-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			
Trocken-----	0-3	5-15	1.40-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.20	0.37	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.05	0.32			
220:												
Bango-----	0-2	5-12	1.40-1.55	2.00-6.00	0.09-0.12	Low	0.0-0.5	0.15	0.32	5	3	86
	2-12	20-30	1.40-1.50	0.20-0.60	0.16-0.19	Moderate	0.0-0.5	0.43	0.49			
	12-60	18-25	1.50-1.70	0.20-0.60	0.15-0.18	Moderate	0.0-0.5	0.37	0.43			
Stumble-----	0-4	3-10	1.40-1.60	6.00-20.00	0.06-0.08	Low	0.0-0.5	0.17	0.20	5	2	134
	4-20	3-10	1.40-1.60	6.00-20.00	0.06-0.08	Low	0.0-0.5	0.17	0.20			
	20-60	3-10	1.40-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.20			
221:												
Bango-----	0-4	0-5	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.24	5	4	86
	4-8	20-30	1.25-1.45	0.20-0.60	0.15-0.18	Moderate	0.0-0.5	0.37	0.37			
	8-60	18-30	1.50-1.70	0.20-0.60	0.15-0.16	Moderate	0.0-0.5	0.43	0.49			
Appian-----	0-6	15-20	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	0.37	3	4L	86
	6-12	27-35	1.45-1.65	0.20-0.60	0.17-0.20	Moderate	0.0-0.5	0.32	0.32			
	12-16	2-5	1.45-1.65	2.00-6.00	0.05-0.09	Low	0.0-0.5	0.17	0.24			
	16-60	0-5	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.15			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
222:												
Bango-----	0-2	5-12	1.40-1.55	2.00-6.00	0.09-0.12	Low	0.0-0.5	0.15	0.32	5	3	86
	2-12	20-30	1.40-1.50	0.20-0.60	0.16-0.19	Moderate	0.0-0.5	0.43	0.49			
	12-60	18-25	1.50-1.70	0.20-0.60	0.15-0.18	Moderate	0.0-0.5	0.37	0.43			
Playas-----	0-6	27-40	1.50-1.70	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37	---	4L	86
	6-60	35-70	1.60-1.80	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37			
Chuckles-----	0-7	12-22	1.35-1.50	0.60-2.00	0.16-0.18	Low	0.0-0.7	0.55	0.55	5	4L	86
	7-14	18-27	1.30-1.50	0.20-0.60	0.19-0.21	Low	0.0-0.5	0.55	0.55			
	14-35	18-27	1.40-1.60	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	35-60	18-35	1.40-1.60	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
230:												
Rock Outcrop.												
Uripnes-----	0-4	10-18	1.40-1.55	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.17	0.32	1	5	56
	4-21	---	---	0.00-20.00	---		---	---	---			
	21-25	---	---	0.00-20.00	---		---	---	---			
Budihol-----	0-3	12-18	1.25-1.40	2.00-6.00	0.07-0.09	Low	1.0-2.0	0.20	0.32	2	4	86
	3-7	12-18	1.20-1.40	2.00-6.00	0.07-0.09	Low	0.5-1.0	0.20	0.32			
	7-21	---	---	0.00-20.00	---		---	---	---			
	21-25	---	---	0.00-0.01	---		---	---	---			
231:												
Uripnes-----	0-4	10-18	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.17	0.32	1	5	56
	4-21	---	---	0.00-20.00	---		---	---	---			
	21-25	---	---	0.00-20.00	---		---	---	---			
Budihol-----	0-3	12-18	1.25-1.40	2.00-6.00	0.07-0.09	Low	1.0-2.0	0.10	0.32	2	5	56
	3-7	12-18	1.20-1.40	2.00-6.00	0.07-0.09	Low	0.5-1.0	0.20	0.32			
	7-21	---	---	0.00-20.00	---		---	---	---			
	21-25	---	---	0.00-0.01	---		---	---	---			
Chill-----	0-4	5-10	1.35-1.50	2.00-6.00	0.08-0.11	Low	0.6-2.0	0.17	0.32	2	4	86
	4-8	25-35	1.30-1.50	0.20-0.60	0.10-0.13	Moderate	0.5-1.0	0.15	0.28			
	8-22	---	---	0.00-20.00	---		---	---	---			
232:												
Rock Outcrop.												
Uripnes-----	0-4	10-18	1.40-1.55	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.17	0.32	1	5	56
	4-21	---	---	0.00-20.00	---		---	---	---			
	21-25	---	---	0.00-20.00	---		---	---	---			
240:												
Watoopah-----	0-2	3-8	1.50-1.65	6.00-20.00	0.04-0.08	Low	0.5-1.0	0.05	0.24	3	3	86
	2-16	10-18	1.35-1.55	2.00-6.00	0.09-0.14	Low	0.5-1.0	0.10	0.32			
	16-29	0-5	1.50-1.65	2.00-6.00	0.03-0.12	Low	0.0-0.5	0.05	0.28			
	29-60	0-5	1.50-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.20			
Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.08-0.11	Low	0.0-0.5	0.24	0.32	5	4	86
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.28			
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.06-0.09	Low	0.0-0.5	0.10	0.32	2	4	86
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
241: Watoopah-----	0-2	1-5	1.50-1.65	>20.00	0.03-0.06	Low	0.5-1.0	0.24	0.24	3	1	220
	2-16	10-18	1.35-1.55	2.00-6.00	0.09-0.14	Low	0.5-1.0	0.10	0.32			
	16-29	0-5	1.50-1.65	2.00-6.00	0.03-0.12	Low	0.0-0.5	0.05	0.28			
	29-60	0-5	1.50-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.20			
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.08-0.11	Low	0.0-0.5	0.15	0.49	2	5	56
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			
Wholan-----	0-6	5-15	1.35-1.50	0.60-2.00	0.15-0.17	Low	0.0-0.5	0.55	0.55	4	3	86
	6-45	5-15	1.35-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.55	0.55			
	45-60	2-10	1.40-1.60	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.37			
250: Rock Outcrop.												
Rezave-----	0-3	27-35	1.30-1.50	0.20-0.60	0.11-0.13	Moderate	0.0-0.5	0.24	0.43	1	7	38
	3-15	40-55	1.20-1.45	0.06-0.20	0.13-0.15	High	0.0-0.5	0.20	0.28			
	15-19	---	---	0.00-0.01	---	---	---	---	---			
Singatse-----	0-4	7-15	1.40-1.60	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.17	0.43	1	7	38
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---	---	---	---	---			
260: Appian-----	0-6	5-15	1.35-1.55	2.00-6.00	0.09-0.12	Low	0.0-0.5	0.28	0.28	3	3	86
	6-12	27-35	1.45-1.65	0.20-0.60	0.17-0.20	Moderate	0.0-0.5	0.32	0.32			
	12-16	2-5	1.45-1.65	2.00-6.00	0.05-0.09	Low	0.0-0.5	0.17	0.24			
	16-60	0-5	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.15			
Playas-----	0-6	27-40	1.50-1.70	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37	---	4L	86
	6-60	35-70	1.60-1.80	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37			
261: Appian-----	0-6	2-5	1.50-1.65	6.00-20.00	0.06-0.08	Low	0.0-0.5	0.20	0.20	3	2	134
	6-12	27-35	1.45-1.65	0.20-0.60	0.17-0.20	Moderate	0.0-0.5	0.32	0.32			
	12-16	2-5	1.45-1.65	2.00-6.00	0.05-0.09	Low	0.0-0.5	0.17	0.24			
	16-60	0-5	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.15			
262: Appian-----	0-6	5-15	1.35-1.55	2.00-6.00	0.09-0.12	Low	0.0-0.5	0.28	0.28	3	3	86
	6-12	27-35	1.45-1.65	0.20-0.60	0.17-0.20	Moderate	0.0-0.5	0.32	0.32			
	12-16	2-5	1.45-1.65	2.00-6.00	0.05-0.09	Low	0.0-0.5	0.17	0.24			
	16-60	0-5	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.15			
Juva-----	0-6	10-20	1.30-1.45	0.60-2.00	0.15-0.17	Low	0.5-1.0	0.37	0.37	5	4L	86
	6-60	5-15	1.40-1.55	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.20	0.24			
Bango-----	0-4	5-10	1.35-1.55	2.00-6.00	0.09-0.12	Low	0.0-0.5	0.20	0.32	5	4	86
	4-8	20-30	1.25-1.45	0.20-0.60	0.15-0.18	Moderate	0.0-0.5	0.37	0.37			
	8-60	18-25	1.50-1.70	0.20-0.60	0.15-0.16	Moderate	0.0-0.5	0.43	0.49			
270: Fubble-----	0-4	12-18	1.30-1.50	0.60-2.00	0.10-0.13	Low	1.0-2.0	0.24	0.49	1	7	38
	4-14	25-35	1.25-1.45	0.20-0.60	0.13-0.15	Moderate	0.0-0.8	0.24	0.43			
	14-19	18-25	1.30-1.50	0.60-2.00	0.12-0.14	Moderate	0.0-0.5	0.28	0.55			
	19-29	---	---	0.00-0.01	---	---	---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
270 (con.): Nicanor-----	0-2	15-22	1.30-1.50	0.60-2.00	0.13-0.15	Low	1.0-2.0	0.28	0.49	1	6	48
	2-5	20-30	1.30-1.50	0.60-2.00	0.15-0.17	Moderate	0.5-1.0	0.24	0.43			
	5-25	---	---	0.00-20.00	---		---	---	---			
	25-29	---	---	0.00-0.01	---		---	---	---			
280: Troocken-----	0-9	5-12	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.0-0.8	0.49	0.55	3	3	86
	9-26	15-22	1.45-1.60	0.60-2.00	0.11-0.13	Low	0.0-0.5	0.17	0.49			
	26-43	3-10	1.50-1.70	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.15	0.43			
	43-60	3-8	1.50-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.15			
Chuckles-----	0-7	12-22	1.35-1.50	0.60-2.00	0.16-0.18	Low	0.0-0.7	0.55	0.55	5	4L	86
	7-14	18-27	1.30-1.50	0.20-0.60	0.19-0.21	Low	0.0-0.5	0.55	0.55			
	14-35	18-27	1.40-1.60	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	35-60	18-35	1.40-1.60	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
281: Troocken-----	0-3	5-15	1.40-1.55	0.60-2.00	0.15-0.17	Low	0.0-0.5	0.55	0.64	5	3	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			
Ragtown-----	0-6	15-25	1.30-1.45	0.20-0.60	0.15-0.17	Low	0.5-1.0	0.37	0.37	5	4L	86
	6-23	28-35	1.40-1.55	0.20-0.60	0.17-0.19	Moderate	0.0-0.5	0.28	0.28			
	23-60	35-45	1.40-1.60	0.06-0.20	0.16-0.19	High	0.0-0.5	0.32	0.32			
283: Troocken-----	0-3	5-15	1.40-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.20	0.37	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.05	0.32			
Bluewing-----	0-7	3-10	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24	5	4	86
	7-60	3-10	1.55-1.75	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
284: Troocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43	5	5	56
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
290: Huxley-----	0-2	27-35	1.30-1.45	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.24	0.32	2	5	56
	2-10	35-50	1.20-1.40	0.06-0.20	0.06-0.08	High	0.0-0.5	0.10	0.32			
	10-60	0-3	1.40-1.55	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.32	0.32			
300: Rock Outcrop.												
Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
Colbar-----	0-6	10-22	1.30-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.37	2	6	48
	6-16	22-35	1.25-1.45	0.20-0.60	0.13-0.15	Moderate	0.0-0.5	0.17	0.32			
	16-21	10-22	1.35-1.55	2.00-6.00	0.12-0.14	Low	0.0-0.5	0.20	0.37			
	21-31	---	---	0.00-0.01	---		---	---	---			
301: Old Camp-----	0-3	10-20	1.30-1.45	0.60-2.00	0.08-0.12	Low	1.0-2.0	0.17	0.43	1	8	---
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
Mirkwood-----	0-2	10-18	1.45-1.60	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.15	0.43	1	8	---
	2-11	25-35	1.30-1.50	0.20-0.60	0.10-0.13	Moderate	0.0-0.5	0.28	0.43			
	11-21	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
301 (con.): Nemico-----	0-3	5-10	1.45-1.60	2.00-6.00	0.08-0.10	Low	0.0-0.5	0.17	0.32	1	5	56
	3-12	35-45	1.40-1.60	0.00-0.06	0.13-0.14	High	0.0-0.5	0.15	0.24			
	12-15	10-15	1.55-1.75	0.06-2.00	0.12-0.13	Low	0.0-0.5	0.17	0.32			
	15-16	---	---	0.00-0.01	---		---	---	---			
	16-20	---	---	0.00-0.01	---		---	---	---			
302: Rock Outcrop.												
Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
Singatse-----	0-4	7-15	1.40-1.60	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.17	0.43	1	6	48
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---		---	---	---			
304: Old Camp-----	0-3	8-20	1.35-1.50	2.00-6.00	0.08-0.10	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
Bombadil-----	0-2	12-20	1.35-1.50	0.60-2.00	0.11-0.14	Low	1.0-2.0	0.28	0.55	1	6	48
	2-6	18-27	1.25-1.45	0.20-0.60	0.15-0.17	Moderate	1.0-2.0	0.32	0.49			
	6-10	25-35	1.25-1.45	0.20-0.60	0.16-0.18	Moderate	0.5-1.0	0.28	0.43			
	10-20	---	---	0.00-0.01	---		---	---	---			
Loomer-----	0-7	15-25	1.10-1.25	0.60-2.00	0.12-0.14	Low	1.0-2.0	0.17	0.32	1	6	48
	7-17	35-50	1.30-1.45	0.06-0.20	0.08-0.10	Moderate	0.5-2.0	0.05	0.43			
	17-21	---	---	0.00-0.01	---		---	---	---			
305: Rock Outcrop.												
Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
Colbar-----	0-6	10-20	1.30-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.10	0.43	2	7	38
	6-16	22-35	1.25-1.45	0.20-0.60	0.13-0.15	Moderate	0.0-0.5	0.17	0.32			
	16-21	10-22	1.35-1.55	2.00-6.00	0.12-0.14	Low	0.0-0.5	0.20	0.37			
	21-31	---	---	0.00-0.01	---		---	---	---			
307: Rock Outcrop.												
Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
Theon-----	0-3	12-20	1.40-1.55	0.60-2.00	0.04-0.09	Low	---	0.10	0.37	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	---	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
308: Old Camp-----	0-3	10-20	1.30-1.45	0.60-2.00	0.08-0.12	Low	1.0-2.0	0.17	0.43	1	8	---
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			



TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
308 (con.):												
Clan Alpine-----	0-10	18-24	1.10-1.25	0.60-2.00	0.14-0.16	Low	1.0-3.0	0.17	0.49	3	7	38
	10-39	25-35	1.30-1.50	0.20-0.60	0.12-0.14	Moderate	0.5-2.0	0.17	0.43			
	39-43	---	---	0.00-0.01	---		---	---	---			
Colbar-----	0-6	10-22	1.30-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.37	2	6	48
	6-16	22-35	1.25-1.45	0.20-0.60	0.13-0.15	Moderate	0.0-0.5	0.17	0.32			
	16-21	10-22	1.35-1.55	2.00-6.00	0.12-0.14	Low	0.0-0.5	0.20	0.37			
	21-31	---	---	0.00-0.01	---		---	---	---			
309:												
Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
Pickup-----	0-10	18-25	1.15-1.35	0.20-0.60	0.08-0.12	Low	1.0-2.0	0.28	0.43	2	7	38
	10-36	40-55	1.20-1.35	0.06-0.20	0.10-0.13	Moderate	0.5-1.0	0.10	0.32			
	36-40	---	---	0.00-0.01	---		---	---	---			
Loomer-----	0-7	15-25	1.10-1.25	0.60-2.00	0.12-0.14	Low	1.0-2.0	0.17	0.32	1	6	48
	7-17	35-50	1.30-1.45	0.06-0.20	0.08-0.10	Moderate	0.5-2.0	0.05	0.43			
	17-21	---	---	0.00-0.01	---		---	---	---			
310:												
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.37	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
Bluewing-----	0-7	3-8	1.40-1.60	6.00-20.00	0.04-0.06	Low	0.3-0.5	0.10	0.24	5	4	86
	7-60	3-8	1.45-1.65	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
311:												
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.37	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.06-0.07	Low	0.0-0.5	0.15	0.32	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.32			
313:												
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
Ricert-----	0-8	12-20	1.40-1.55	2.00-6.00	0.10-0.12	Low	0.0-0.8	0.20	0.37	4	6	48
	8-18	25-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	0.0-0.5	0.32	0.32			
	18-26	22-32	1.40-1.60	0.60-2.00	0.17-0.19	Moderate	0.0-0.5	0.37	0.43			
	26-60	6-16	1.40-1.55	2.00-6.00	0.03-0.07	Low	0.0-0.2	0.05	0.20			
Trocken-----	0-3	5-15	1.40-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	0.55	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
315:												
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.06-0.07	Low	0.0-0.5	0.15	0.32	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.32			
Barnmot-----	0-2	40-50	1.25-1.45	0.06-0.20	0.12-0.14	High	0.0-0.7	0.17	0.28	5	6	48
	2-60	35-55	1.30-1.50	0.00-0.06	0.13-0.15	High	0.0-0.5	0.24	0.24			
316:												
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
317:												
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
Cleaver-----	0-4	7-20	1.40-1.55	0.60-2.00	0.10-0.13	Moderate	0.0-0.5	0.20	0.32	1	6	48
	4-12	25-35	1.30-1.50	0.06-0.20	0.12-0.16	Moderate	0.0-0.5	0.20	0.37			
	12-60	---	---	0.00-0.01	---	---	---	---	---			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43	5	5	56
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
320:												
Rock Outcrop.												
Jung-----	0-7	10-15	1.35-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.17	0.55	1	7	38
	7-15	35-45	1.45-1.60	0.06-0.20	0.10-0.14	Moderate	0.5-0.8	0.17	0.55			
	15-19	---	---	0.00-0.01	---	---	---	---	---			
Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---	---	---	---	---			
321:												
Jung-----	0-7	10-15	1.35-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.17	0.55	1	7	38
	7-15	35-45	1.45-1.60	0.06-0.20	0.10-0.14	Moderate	0.5-0.8	0.17	0.55			
	15-19	---	---	0.00-0.01	---	---	---	---	---			
Desatoya-----	0-6	10-20	1.30-1.45	0.60-2.00	0.10-0.12	Low	1.0-3.0	0.10	0.43	5	7	38
	6-15	35-45	1.25-1.40	0.06-0.20	0.14-0.17	High	0.5-1.0	0.20	0.37			
	15-60	8-18	1.15-1.35	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.32			
Roca-----	0-6	18-25	1.30-1.45	0.60-2.00	0.13-0.15	Low	1.0-2.0	0.10	0.37	2	7	38
	6-25	35-50	1.25-1.45	0.00-0.06	0.10-0.13	Moderate	0.0-0.5	0.10	0.32			
	25-29	---	---	0.00-0.01	---	---	---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
322: Jung-----	0-7	10-15	1.35-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.17	0.55	1	7	38
	7-15	35-45	1.45-1.60	0.06-0.20	0.10-0.14	Moderate	0.5-0.8	0.17	0.55			
	15-19	---	---	0.00-0.01	---		---	---	---			
Puett-----	0-3	5-10	1.30-1.50	2.00-6.00	0.13-0.15	Low	0.5-1.0	0.28	0.32	2	3	86
	3-11	5-10	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.5	0.28	0.32			
	11-20	---	---	0.00-0.01	---		---	---	---			
Buffaran-----	0-7	20-27	1.10-1.25	0.20-0.60	0.12-0.15	Moderate	2.0-4.0	0.32	0.55	1	7	38
	7-15	35-50	1.15-1.30	0.06-0.20	0.12-0.15	High	0.0-1.0	0.24	0.32			
	15-60	---	---	0.00-0.01	---		---	---	---			
324: Jung-----	0-7	10-15	1.35-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.17	0.55	1	7	38
	7-15	35-45	1.45-1.60	0.06-0.20	0.10-0.14	Moderate	0.5-0.8	0.17	0.55			
	15-19	---	---	0.00-0.01	---		---	---	---			
Clanalpine-----	0-10	18-24	1.10-1.25	0.60-2.00	0.14-0.16	Low	1.0-3.0	0.17	0.49	3	7	38
	10-39	25-35	1.30-1.50	0.20-0.60	0.12-0.14	Moderate	0.5-2.0	0.17	0.43			
	39-43	---	---	0.00-0.01	---		---	---	---			
Colbar-----	0-6	10-22	1.30-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.37	2	6	48
	6-16	22-35	1.25-1.45	0.20-0.60	0.13-0.15	Moderate	0.0-0.5	0.17	0.32			
	16-21	10-22	1.35-1.55	2.00-6.00	0.12-0.14	Low	0.0-0.5	0.20	0.37			
	21-31	---	---	0.00-0.01	---		---	---	---			
325: Jung-----	0-7	10-15	1.35-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.17	0.55	1	7	38
	7-15	35-45	1.45-1.60	0.06-0.20	0.10-0.14	Moderate	0.5-0.8	0.17	0.55			
	15-19	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
Clanalpine-----	0-10	18-24	1.10-1.25	0.60-2.00	0.14-0.16	Low	1.0-3.0	0.17	0.49	3	7	38
	10-39	25-35	1.30-1.50	0.20-0.60	0.12-0.14	Moderate	0.5-2.0	0.17	0.43			
	39-43	---	---	0.00-0.01	---		---	---	---			
330: Settlement-----	0-4	40-60	1.20-1.30	0.06-0.20	0.15-0.17	High	0.0-0.5	0.32	0.32	5	4	86
	4-12	40-60	1.10-1.30	0.00-0.06	0.13-0.16	High	0.0-0.5	0.28	0.32			
	12-60	45-60	1.05-1.20	0.00-0.06	0.13-0.16	High	0.0-0.5	0.28	0.32			
Louderback-----	0-4	2-8	1.50-1.65	6.00-20.00	0.05-0.07	Low	0.5-1.0	0.20	0.20	5	1	220
	4-31	2-8	1.50-1.65	6.00-20.00	0.05-0.07	Low	0.5-1.0	0.20	0.20			
	31-60	5-10	1.40-1.60	0.60-2.00	0.09-0.10	Low	0.0-0.5	0.24	0.28			
Rustigate-----	0-10	18-27	1.25-1.40	0.60-2.00	0.19-0.21	Moderate	0.5-1.0	0.49	0.49	5	4L	86
	10-33	18-27	1.30-1.50	0.60-2.00	0.16-0.18	Moderate	0.0-0.5	0.43	0.43			
	33-60	8-20	1.35-1.55	0.60-2.00	0.12-0.16	Moderate	0.0-0.5	0.43	0.43			
331: Settlement-----	0-4	30-40	1.25-1.35	0.06-0.20	0.19-0.21	High	0.0-0.5	0.37	0.37	5	4L	86
	4-12	40-60	1.10-1.30	0.00-0.06	0.13-0.16	High	0.0-0.5	0.28	0.32			
	12-60	45-60	1.05-1.20	0.00-0.06	0.13-0.16	High	0.0-0.5	0.28	0.32			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
331 (con.): Chuckles-----	0-7	12-22	1.35-1.50	0.60-2.00	0.16-0.18	Low	0.0-0.7	0.55	0.55	5	4L	86
	7-14	18-27	1.30-1.50	0.20-0.60	0.19-0.21	Low	0.0-0.5	0.55	0.55			
	14-35	18-27	1.40-1.60	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	35-60	18-35	1.40-1.60	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
Rustigate-----	0-10	18-27	1.25-1.40	0.60-2.00	0.19-0.21	Moderate	0.5-1.0	0.49	0.49	5	4L	86
	10-33	18-27	1.30-1.50	0.60-2.00	0.16-0.18	Moderate	0.0-0.5	0.43	0.43			
	33-60	8-20	1.35-1.55	0.60-2.00	0.12-0.16	Moderate	0.0-0.5	0.43	0.43			
340: Slaw-----	0-9	8-18	1.15-1.35	0.60-2.00	0.19-0.21	Low	0.5-1.0	0.55	0.55	5	4L	86
	9-60	25-35	1.35-1.50	0.06-0.20	0.19-0.21	Moderate	0.0-0.5	0.37	0.37			
Juva-----	0-6	10-20	1.30-1.45	0.60-2.00	0.15-0.17	Low	0.5-1.0	0.37	0.37	5	4L	86
	6-60	5-15	1.40-1.55	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.20	0.24			
Wholan-----	0-7	5-15	1.35-1.50	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	5	56
	7-60	5-15	1.35-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.55	0.55			
341: Slaw-----	0-9	8-18	1.15-1.35	0.60-2.00	0.19-0.21	Low	0.5-1.0	0.55	0.55	5	4L	86
	9-60	25-35	1.35-1.50	0.06-0.20	0.19-0.21	Moderate	0.0-0.5	0.37	0.37			
Chuckles-----	0-7	12-22	1.35-1.50	0.60-2.00	0.16-0.18	Low	0.0-0.7	0.55	0.55	5	4L	86
	7-14	18-27	1.30-1.50	0.20-0.60	0.19-0.21	Low	0.0-0.5	0.55	0.55			
	14-35	18-27	1.40-1.60	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	35-60	18-35	1.40-1.60	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
342: Slaw-----	0-9	8-18	1.15-1.35	0.60-2.00	0.19-0.21	Low	0.5-1.0	0.55	0.55	5	4L	86
	9-60	25-35	1.35-1.50	0.06-0.20	0.19-0.21	Moderate	0.0-0.5	0.37	0.37			
Mazuma-----	0-5	5-15	1.40-1.55	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	4L	86
	5-25	5-15	1.40-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.43	0.43			
	25-60	5-15	1.45-1.65	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.24	0.32			
Hessing-----	0-7	15-20	1.25-1.45	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	3	5	56
	7-13	20-30	1.25-1.45	0.20-0.60	0.19-0.21	Moderate	0.0-0.5	0.49	0.49			
	13-20	15-20	1.50-1.70	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.49	0.49			
	20-27	15-27	1.40-1.55	0.60-2.00	0.14-0.16	Low	0.0-0.5	0.32	0.32			
	27-60	0-5	1.50-1.70	>20.00	0.03-0.06	Low	0.0-0.5	0.05	0.24			
343: Slaw-----	0-9	8-18	1.15-1.35	0.60-2.00	0.19-0.21	Low	0.5-1.0	0.55	0.55	5	4L	86
	9-60	25-35	1.35-1.50	0.06-0.20	0.19-0.21	Moderate	0.0-0.5	0.37	0.37			
Trocken-----	0-9	15-22	1.40-1.55	0.60-2.00	0.11-0.13	Low	0.0-0.8	0.17	0.49	4	6	48
	9-26	15-22	1.45-1.60	0.60-2.00	0.11-0.13	Low	0.0-0.5	0.17	0.49			
	26-43	3-10	1.50-1.70	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.15	0.43			
	43-60	3-8	1.50-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.15			
Chuckles-----	0-7	12-22	1.35-1.50	0.60-2.00	0.16-0.18	Low	0.0-0.7	0.55	0.55	5	4L	86
	7-14	18-27	1.30-1.50	0.20-0.60	0.19-0.21	Low	0.0-0.5	0.55	0.55			
	14-35	18-27	1.40-1.60	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	35-60	18-35	1.40-1.60	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
344: Slaw-----	0-9	8-18	1.15-1.35	0.60-2.00	0.19-0.21	Low	0.5-1.0	0.55	0.55	5	4L	86
	9-60	25-35	1.35-1.50	0.06-0.20	0.19-0.21	Moderate	0.0-0.5	0.37	0.37			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
344 (con.): Ragtown-----	0-6	10-15	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.5-1.0	0.37	0.43	5	3	86
	6-23	28-35	1.40-1.55	0.20-0.60	0.17-0.19	Moderate	0.0-0.5	0.28	0.28			
	23-60	35-45	1.40-1.60	0.06-0.20	0.16-0.19	High	0.0-0.5	0.32	0.32			
350: Ricert-----	0-8	12-20	1.40-1.55	2.00-6.00	0.10-0.12	Low	0.0-0.8	0.20	0.37	4	6	48
	8-18	25-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	0.0-0.5	0.32	0.32			
	18-26	22-32	1.40-1.60	0.60-2.00	0.17-0.19	Moderate	0.0-0.5	0.37	0.43			
	26-60	6-16	1.40-1.55	2.00-6.00	0.03-0.07	Low	0.0-0.2	0.05	0.20			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
351: Ricert-----	0-8	12-20	1.40-1.55	2.00-6.00	0.10-0.12	Low	0.0-0.8	0.20	0.37	4	6	48
	8-18	25-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	0.0-0.5	0.32	0.32			
	18-26	22-32	1.40-1.60	0.60-2.00	0.17-0.19	Moderate	0.0-0.5	0.37	0.43			
	26-60	6-16	1.40-1.55	2.00-6.00	0.03-0.07	Low	0.0-0.2	0.05	0.20			
Chilper-----	0-2	5-10	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.0-0.5	0.37	0.64	2	4	86
	2-5	5-10	1.40-1.55	0.60-2.00	0.15-0.17	Low	0.0-0.5	0.55	0.64			
	5-25	35-50	1.30-1.45	0.00-0.06	0.14-0.21	High	0.0-0.5	0.43	0.49			
	25-60	5-10	1.55-1.70	0.20-0.60	0.03-0.05	Low	0.0-0.5	0.10	0.32			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
352: Ricert-----	0-5	12-20	1.35-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.8	0.10	0.43	4	7	38
	5-14	25-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	0.0-0.5	0.32	0.32			
	14-20	22-32	1.40-1.60	0.60-2.00	0.17-0.19	Moderate	0.0-0.5	0.37	0.43			
	20-60	6-15	1.40-1.55	2.00-6.00	0.03-0.07	Low	0.0-0.5	0.05	0.20			
Desatoya-----	0-6	10-20	1.30-1.45	0.60-2.00	0.10-0.12	Low	1.0-3.0	0.10	0.43	5	7	38
	6-15	35-45	1.25-1.40	0.06-0.20	0.14-0.17	High	0.5-1.0	0.20	0.37			
	15-60	8-18	1.15-1.35	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.32			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.08-0.11	Low	1.0-2.0	0.15	0.49	5	7	38
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.5-0.8	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
353: Ricert-----	0-8	12-20	1.40-1.55	2.00-6.00	0.10-0.12	Low	0.0-0.8	0.20	0.37	4	6	48
	8-18	25-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	0.0-0.5	0.32	0.32			
	18-26	22-32	1.40-1.60	0.60-2.00	0.17-0.19	Moderate	0.0-0.5	0.37	0.43			
	26-60	6-16	1.40-1.55	2.00-6.00	0.03-0.07	Low	0.0-0.2	0.05	0.20			
Trocken-----	0-3	5-15	1.40-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.20	0.37	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.05	0.32			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
358:												
Ricert-----	0-8	12-20	1.40-1.55	2.00-6.00	0.10-0.12	Low	0.0-0.8	0.20	0.37	4	6	48
	8-18	25-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	0.0-0.5	0.32	0.32			
	18-26	22-32	1.40-1.60	0.60-2.00	0.17-0.19	Moderate	0.0-0.5	0.37	0.43			
	26-60	6-16	1.40-1.55	2.00-6.00	0.03-0.07	Low	0.0-0.2	0.05	0.20			
Desatoya-----	0-6	10-20	1.30-1.45	0.60-2.00	0.10-0.12	Low	1.0-3.0	0.10	0.43	5	7	38
	6-15	35-45	1.25-1.40	0.06-0.20	0.14-0.17	High	0.5-1.0	0.20	0.37			
	15-60	8-18	1.15-1.35	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.32			
Trocken-----	0-3	5-15	1.40-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	0.55	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			
359:												
Ricert-----	0-5	12-20	1.35-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.8	0.10	0.43	4	7	38
	5-14	25-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	0.0-0.5	0.32	0.32			
	14-20	22-32	1.40-1.60	0.60-2.00	0.17-0.19	Moderate	0.0-0.5	0.37	0.43			
	20-60	6-15	1.40-1.55	2.00-6.00	0.03-0.07	Low	0.0-0.5	0.05	0.20			
Celeton-----	0-2	8-15	0.85-1.10	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.49	1	6	48
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---	---	---	---	---			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.37	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
360:												
Ricert-----	0-8	12-20	1.40-1.55	2.00-6.00	0.10-0.12	Low	0.0-0.8	0.20	0.37	4	6	48
	8-18	25-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	0.0-0.5	0.32	0.32			
	18-26	22-32	1.40-1.60	0.60-2.00	0.17-0.19	Moderate	0.0-0.5	0.37	0.43			
	26-60	6-16	1.40-1.55	2.00-6.00	0.03-0.07	Low	0.0-0.2	0.05	0.20			
Trocken-----	0-3	5-15	1.40-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	0.55	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			
Rebel-----	0-11	8-15	1.35-1.50	2.00-6.00	0.14-0.17	Low	0.8-2.0	0.43	0.43	5	5	56
	11-60	10-18	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.6	0.20	0.24			
370:												
Duco-----	0-4	10-20	1.35-1.50	0.60-2.00	0.08-0.10	Low	1.0-2.0	0.28	0.37	1	6	48
	4-11	27-35	1.40-1.60	0.20-0.60	0.08-0.10	Moderate	0.5-2.0	0.05	0.32			
	11-15	---	---	0.00-0.01	---	---	---	---	---			
Clan Alpine-----	0-10	18-24	1.10-1.25	0.60-2.00	0.14-0.16	Low	1.0-3.0	0.17	0.49	3	7	38
	10-39	25-35	1.30-1.50	0.20-0.60	0.12-0.14	Moderate	0.5-2.0	0.17	0.43			
	39-43	---	---	0.00-0.01	---	---	---	---	---			
Jung-----	0-7	10-15	1.35-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.17	0.55	1	7	38
	7-15	35-45	1.45-1.60	0.06-0.20	0.10-0.14	Moderate	0.5-0.8	0.17	0.55			
	15-19	---	---	0.00-0.01	---	---	---	---	---			
371:												
Duco-----	0-4	10-20	1.35-1.50	0.60-2.00	0.08-0.10	Low	1.0-2.0	0.28	0.37	1	6	48
	4-11	27-35	1.40-1.60	0.20-0.60	0.08-0.10	Moderate	0.5-2.0	0.05	0.32			
	11-15	---	---	0.00-0.01	---	---	---	---	---			
Clan Alpine-----	0-10	18-24	1.10-1.25	0.60-2.00	0.14-0.16	Low	1.0-3.0	0.17	0.49	3	7	38
	10-39	25-35	1.30-1.50	0.20-0.60	0.12-0.14	Moderate	0.5-2.0	0.17	0.43			
	39-43	---	---	0.00-0.01	---	---	---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
371 (con.): Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
373: Duco-----	0-4	10-20	1.35-1.50	0.60-2.00	0.08-0.10	Low	1.0-2.0	0.28	0.37	1	6	48
	4-11	27-35	1.40-1.60	0.20-0.60	0.08-0.10	Moderate	0.5-2.0	0.05	0.32			
	11-15	---	---	0.00-0.01	---		---	---	---			
Itca-----	0-4	15-27	1.15-1.30	0.60-2.00	0.16-0.18	Moderate	1.0-3.0	0.20	0.32	1	6	48
	4-16	35-45	1.25-1.45	0.06-0.20	0.14-0.16	Moderate	0.5-2.0	0.10	0.32			
	16-20	---	---	0.00-0.01	---		---	---	---			
Puett-----	0-3	5-10	1.30-1.50	2.00-6.00	0.13-0.15	Low	0.5-1.0	0.28	0.32	2	3	86
	3-11	5-10	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.5	0.28	0.32			
	11-20	---	---	0.00-0.01	---		---	---	---			
380: Rock Outcrop.												
Itca-----	0-4	15-27	1.15-1.30	0.60-2.00	0.16-0.18	Moderate	1.0-3.0	0.10	0.32	1	6	48
	4-16	35-45	1.25-1.45	0.06-0.20	0.14-0.16	Moderate	0.5-2.0	0.10	0.32			
	16-20	---	---	0.00-0.01	---		---	---	---			
Clan Alpine-----	0-10	18-24	1.10-1.25	0.60-2.00	0.14-0.16	Low	1.0-3.0	0.17	0.49	3	7	38
	10-39	25-35	1.30-1.50	0.20-0.60	0.12-0.14	Moderate	0.5-2.0	0.17	0.43			
	39-43	---	---	0.00-0.01	---		---	---	---			
381: Itca-----	0-4	15-27	1.15-1.30	0.60-2.00	0.08-0.13	Low	1.0-3.0	0.10	0.43	1	7	38
	4-16	35-45	1.25-1.45	0.06-0.20	0.14-0.16	Moderate	0.5-2.0	0.10	0.32			
	16-20	---	---	0.00-0.01	---		---	---	---			
Reluctan-----	0-9	15-22	1.15-1.35	0.60-2.00	0.09-0.11	Low	2.0-4.0	0.15	0.55	2	7	38
	9-25	25-35	1.35-1.55	0.20-0.60	0.12-0.15	Moderate	0.5-2.0	0.24	0.43			
	25-29	---	---	0.00-0.01	---		---	---	---			
Walti-----	0-4	10-20	1.30-1.45	0.60-2.00	0.12-0.14	Low	1.0-3.0	0.15	0.43	2	7	38
	4-10	27-35	1.30-1.50	0.06-0.20	0.16-0.20	Moderate	1.0-2.0	0.20	0.43			
	10-22	50-60	1.20-1.40	0.00-0.06	0.12-0.15	High	0.5-2.0	0.15	0.37			
	22-26	---	---	0.00-0.01	---		---	---	---			
390: Defler-----	0-7	8-18	1.40-1.60	2.00-6.00	0.07-0.10	Low	0.0-0.5	0.24	0.32	5	4	86
	7-44	8-18	1.15-1.35	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.15	0.43			
	44-60	5-10	1.20-1.40	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
391: Defler-----	0-7	8-18	1.40-1.60	2.00-6.00	0.07-0.10	Low	0.0-0.5	0.24	0.32	5	4	86
	7-44	8-18	1.15-1.35	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.15	0.43			
	44-60	5-10	1.20-1.40	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
Trocken-----	0-3	5-15	1.40-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	0.55	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
400:												
Chuckles-----	0-7	12-22	1.35-1.50	0.60-2.00	0.16-0.18	Low	0.0-0.7	0.55	0.55	5	4L	86
	7-14	18-27	1.30-1.50	0.20-0.60	0.19-0.21	Low	0.0-0.5	0.55	0.55			
	14-35	18-27	1.40-1.60	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	35-60	18-35	1.40-1.60	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
Playas-----	0-6	27-40	1.50-1.70	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37	---	4L	86
	6-60	35-70	1.60-1.80	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37			
401:												
Chuckles-----	0-7	12-22	1.35-1.50	0.60-2.00	0.16-0.18	Low	0.0-0.7	0.55	0.55	5	4L	86
	7-14	18-27	1.30-1.50	0.20-0.60	0.19-0.21	Low	0.0-0.5	0.55	0.55			
	14-35	18-27	1.40-1.60	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	35-60	18-35	1.40-1.60	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
Bango-----	0-2	5-12	1.40-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.15	0.17	5	2	134
	2-12	20-30	1.40-1.50	0.20-0.60	0.16-0.19	Moderate	0.0-0.5	0.43	0.49			
	12-60	18-25	1.50-1.70	0.20-0.60	0.15-0.18	Moderate	0.0-0.5	0.37	0.43			
402:												
Chuckles-----	0-7	12-22	1.35-1.50	0.60-2.00	0.16-0.18	Low	0.0-0.7	0.55	0.55	5	4L	86
	7-14	18-27	1.30-1.50	0.20-0.60	0.19-0.21	Low	0.0-0.5	0.55	0.55			
	14-35	18-27	1.40-1.60	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	35-60	18-35	1.40-1.60	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
Playas-----	0-6	27-40	1.50-1.70	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37	---	4L	86
	6-60	35-70	1.60-1.80	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37			
Slaw-----	0-9	8-18	1.15-1.35	0.60-2.00	0.19-0.21	Low	0.5-1.0	0.55	0.55	5	4L	86
	9-60	25-35	1.35-1.50	0.06-0.20	0.19-0.21	Moderate	0.0-0.5	0.37	0.37			
404:												
Chuckles-----	0-7	12-22	1.35-1.50	0.60-2.00	0.16-0.18	Low	0.0-0.7	0.55	0.55	5	4L	86
	7-14	18-27	1.30-1.50	0.20-0.60	0.19-0.21	Low	0.0-0.5	0.55	0.55			
	14-35	18-27	1.40-1.60	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	35-60	18-35	1.40-1.60	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
Settlement-----	0-4	40-60	1.20-1.30	0.06-0.20	0.15-0.17	High	0.0-0.5	0.32	0.32	5	4	86
	4-12	40-60	1.10-1.30	0.00-0.06	0.13-0.16	High	0.0-0.5	0.28	0.32			
	12-60	45-60	1.05-1.20	0.00-0.06	0.13-0.16	High	0.0-0.5	0.28	0.32			
Rebel-----	0-11	8-15	1.35-1.50	2.00-6.00	0.14-0.17	Low	0.8-2.0	0.43	0.43	5	5	56
	11-60	10-18	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.6	0.20	0.24			
410:												
Buffaran-----	0-7	20-27	1.10-1.25	0.20-0.60	0.12-0.15	Moderate	2.0-4.0	0.32	0.55	1	7	38
	7-15	35-50	1.15-1.30	0.06-0.20	0.12-0.15	High	0.0-1.0	0.24	0.32			
	15-60	---	---	0.00-0.01	---		---	---	---			
Desatoya-----	0-6	10-20	1.30-1.45	0.60-2.00	0.10-0.12	Low	1.0-3.0	0.10	0.43	5	7	38
	6-15	35-45	1.25-1.40	0.06-0.20	0.14-0.17	High	0.5-1.0	0.20	0.37			
	15-60	8-18	1.15-1.35	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.32			
411:												
Buffaran-----	0-7	20-27	1.10-1.25	0.20-0.60	0.12-0.15	Moderate	2.0-4.0	0.32	0.55	1	7	38
	7-15	35-50	1.15-1.30	0.06-0.20	0.12-0.15	High	0.0-1.0	0.24	0.32			
	15-60	---	---	0.00-0.01	---		---	---	---			
Rebel-----	0-11	8-15	1.35-1.50	2.00-6.00	0.14-0.17	Low	0.8-2.0	0.43	0.43	5	5	56
	11-60	10-18	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.6	0.20	0.24			



TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
411 (con.): Puett-----	0-3	5-10	1.30-1.50	2.00-6.00	0.13-0.15	Low	0.5-1.0	0.28	0.32	2	3	86
	3-11	5-10	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.5	0.28	0.32			
	11-20	---	---	0.00-0.01	---		---	---	---			
420: Trocken-----	0-3	5-15	1.40-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	0.55	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			
Hessing-----	0-7	15-20	1.25-1.45	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	3	5	56
	7-13	20-30	1.25-1.45	0.20-0.60	0.19-0.21	Moderate	0.0-0.5	0.49	0.49			
	13-20	15-20	1.50-1.70	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.49	0.49			
	20-27	15-27	1.40-1.55	0.60-2.00	0.14-0.16	Low	0.0-0.5	0.32	0.32			
	27-60	0-5	1.50-1.70	>20.00	0.03-0.06	Low	0.0-0.5	0.05	0.24			
Dun Glen-----	0-5	11-16	1.40-1.55	0.60-2.00	0.16-0.18	Low	0.0-0.5	0.37	0.37	5	5	56
	5-12	11-16	1.35-1.55	0.60-2.00	0.15-0.21	Low	0.0-0.5	0.43	0.43			
	12-60	9-14	1.35-1.55	0.60-2.00	0.11-0.17	Low	0.0-0.5	0.32	0.32			
422: Trocken-----	0-3	5-15	1.40-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	0.55	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			
Hessing-----	0-7	15-20	1.25-1.45	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	3	5	56
	7-13	20-30	1.25-1.45	0.20-0.60	0.19-0.21	Moderate	0.0-0.5	0.49	0.49			
	13-20	15-20	1.50-1.70	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.49	0.49			
	20-27	15-27	1.40-1.55	0.60-2.00	0.14-0.16	Low	0.0-0.5	0.32	0.32			
	27-60	0-5	1.50-1.70	>20.00	0.03-0.06	Low	0.0-0.5	0.05	0.24			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
423: Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43	5	5	56
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
Bluewing-----	0-7	3-8	1.40-1.60	6.00-20.00	0.04-0.06	Low	0.3-0.5	0.10	0.24	5	4	86
	7-60	3-8	1.45-1.65	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
Trocken-----	0-9	5-12	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.0-0.8	0.49	0.55	3	3	86
	9-26	15-22	1.45-1.60	0.60-2.00	0.11-0.13	Low	0.0-0.5	0.17	0.49			
	26-43	3-10	1.50-1.70	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.15	0.43			
	43-60	3-8	1.50-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.15			
425: Trocken-----	0-3	5-15	1.40-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	0.55	5	4	86

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
430 (con.):												
Kram-----	0-5	8-12	1.35-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.15	0.49	1	5	56
	5-14	8-18	1.40-1.55	0.60-2.00	0.04-0.09	Low	0.5-1.0	0.10	0.37			
	14-18	---	---	0.00-0.01	---		---	---	---			
Attella-----	0-3	12-22	1.10-1.20	0.60-2.00	0.11-0.14	Low	2.0-4.0	0.15	0.49	1	6	48
	3-7	15-27	1.05-1.20	0.60-2.00	0.11-0.14	Low	1.0-2.0	0.15	0.49			
	7-11	---	---	0.00-0.01	---		---	---	---			
432:												
Rock Outcrop.												
Kram-----	0-5	8-12	1.35-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.15	0.49	1	5	56
	5-14	8-18	1.40-1.55	0.60-2.00	0.04-0.09	Low	0.5-1.0	0.10	0.37			
	14-18	---	---	0.00-0.01	---		---	---	---			
Findout-----	0-3	12-18	1.25-1.40	2.00-6.00	0.08-0.12	Low	0.5-1.0	0.17	0.49	1	6	48
	3-8	25-35	1.10-1.30	0.20-0.60	0.10-0.13	Moderate	0.5-1.0	0.15	0.43			
	8-14	18-27	1.10-1.30	0.60-2.00	0.10-0.13	Moderate	0.0-0.5	0.15	0.43			
	14-18	---	---	0.00-0.01	---		---	---	---			
433:												
Rock Outcrop.												
Kram-----	0-5	8-12	1.35-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.15	0.49	1	5	56
	5-14	8-18	1.40-1.55	0.60-2.00	0.04-0.09	Low	0.5-1.0	0.10	0.37			
	14-18	---	---	0.00-0.01	---		---	---	---			
Hopeka-----	0-9	18-27	1.15-1.25	0.60-2.00	0.04-0.07	Low	1.0-2.0	0.20	0.43	1	6	48
	9-13	---	---	0.00-0.01	---		---	---	---			
440:												
Ravenswood-----	0-8	14-22	1.15-1.35	0.60-2.00	0.15-0.18	Moderate	1.0-3.0	0.24	0.37	2	6	48
	8-12	32-40	1.25-1.45	0.06-0.20	0.14-0.16	Moderate	0.5-2.0	0.24	0.43			
	12-23	35-50	1.20-1.40	0.06-0.20	0.14-0.16	Moderate	0.5-1.0	0.10	0.32			
	23-27	---	---	0.00-0.01	---		---	---	---			
Itca-----	0-4	15-27	1.15-1.30	0.60-2.00	0.16-0.18	Moderate	1.0-3.0	0.10	0.32	1	7	38
	4-16	35-45	1.25-1.45	0.06-0.20	0.14-0.16	Moderate	0.5-2.0	0.10	0.32			
	16-20	---	---	0.00-0.01	---		---	---	---			
Walti-----	0-4	10-20	1.30-1.45	0.60-2.00	0.09-0.12	Low	1.0-3.0	0.24	0.43	2	6	48
	4-10	27-35	1.30-1.50	0.06-0.20	0.15-0.20	Moderate	1.0-2.0	0.20	0.43			
	10-22	50-60	1.20-1.40	0.00-0.06	0.12-0.15	High	0.5-0.7	0.15	0.37			
	22-26	---	---	0.00-0.01	---		---	---	---			
450:												
Wholan-----	0-7	5-15	1.35-1.50	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	5	56
	7-60	5-15	1.35-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.55	0.55			
Wholan-----	0-6	5-15	1.35-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.55	0.55	4	5	56
	6-45	5-15	1.35-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.55	0.55			
	45-60	2-10	1.40-1.60	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.37			
Defler-----	0-7	8-18	1.40-1.60	2.00-6.00	0.07-0.10	Low	0.0-0.5	0.24	0.32	5	4	86
	7-44	8-18	1.15-1.35	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.15	0.43			
	44-60	5-10	1.20-1.40	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
460:												
Juva-----	0-6	10-20	1.30-1.45	0.60-2.00	0.15-0.17	Low	0.5-1.0	0.37	0.37	5	4L	86
	6-60	5-15	1.40-1.55	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.20	0.24			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
460 (con.):												
Wholan-----	0-7	5-15	1.35-1.50	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	5	56
	7-60	5-15	1.35-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.55	0.55			
Stumble-----	0-4	3-10	1.40-1.60	6.00-20.00	0.06-0.08	Low	0.0-0.5	0.17	0.20	5	2	134
	4-20	3-10	1.40-1.60	6.00-20.00	0.06-0.08	Low	0.0-0.5	0.17	0.20			
	20-60	3-10	1.40-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.20			
470:												
Hessing-----	0-7	15-20	1.25-1.45	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	3	5	56
	7-13	20-30	1.25-1.45	0.20-0.60	0.19-0.21	Moderate	0.0-0.5	0.49	0.49			
	13-20	15-20	1.50-1.70	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.49	0.49			
	20-27	15-27	1.40-1.55	0.60-2.00	0.14-0.16	Low	0.0-0.5	0.32	0.32			
	27-60	0-5	1.50-1.70	>20.00	0.03-0.06	Low	0.0-0.5	0.05	0.24			
Wholan-----	0-7	5-15	1.35-1.50	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	5	56
	7-60	5-15	1.35-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.55	0.55			
Dun Glen-----	0-5	11-16	1.40-1.55	0.60-2.00	0.16-0.18	Low	0.0-0.5	0.37	0.37	5	5	56
	5-12	11-16	1.35-1.55	0.60-2.00	0.15-0.21	Low	0.0-0.5	0.43	0.43			
	12-60	9-14	1.35-1.55	0.60-2.00	0.11-0.17	Low	0.0-0.5	0.32	0.32			
471:												
Hessing-----	0-7	15-20	1.25-1.45	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	3	5	56
	7-13	20-30	1.25-1.45	0.20-0.60	0.19-0.21	Moderate	0.0-0.5	0.49	0.49			
	13-20	15-20	1.50-1.70	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.49	0.49			
	20-27	15-27	1.40-1.55	0.60-2.00	0.14-0.16	Low	0.0-0.5	0.32	0.32			
	27-60	0-5	1.50-1.70	>20.00	0.03-0.06	Low	0.0-0.5	0.05	0.24			
Dun Glen-----	0-5	11-16	1.40-1.55	0.60-2.00	0.16-0.18	Low	0.0-0.5	0.37	0.37	5	5	56
	5-12	11-16	1.35-1.55	0.60-2.00	0.15-0.21	Low	0.0-0.5	0.43	0.43			
	12-60	9-14	1.35-1.55	0.60-2.00	0.11-0.17	Low	0.0-0.5	0.32	0.32			
Bango-----	0-2	5-12	1.40-1.55	2.00-6.00	0.09-0.12	Low	0.0-0.5	0.15	0.32	5	3	86
	2-12	20-30	1.40-1.50	0.20-0.60	0.16-0.19	Moderate	0.0-0.5	0.43	0.49			
	12-60	18-25	1.50-1.70	0.20-0.60	0.15-0.18	Moderate	0.0-0.5	0.37	0.43			
480:												
Yody-----	0-7	5-10	1.35-1.50	2.00-6.00	0.07-0.09	Low	0.7-2.0	0.20	0.32	2	4	86
	7-16	20-35	1.30-1.50	0.60-2.00	0.15-0.18	Moderate	0.5-1.0	0.20	0.32			
	16-30	5-10	1.55-1.70	2.00-6.00	0.09-0.11	Low	0.0-0.5	0.20	0.49			
	30-60	---	---	0.00-0.01	---	---	---	---	---			
Buffaran-----	0-7	20-27	1.10-1.25	0.20-0.60	0.12-0.15	Moderate	2.0-4.0	0.32	0.55	1	7	38
	7-15	35-50	1.15-1.30	0.06-0.20	0.12-0.15	High	0.0-1.0	0.24	0.32			
	15-60	---	---	0.00-0.01	---	---	---	---	---			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
481:												
Yody-----	0-7	5-10	1.35-1.50	2.00-6.00	0.07-0.09	Low	0.7-2.0	0.20	0.32	2	4	86
	7-16	20-35	1.30-1.50	0.60-2.00	0.15-0.18	Moderate	0.5-1.0	0.20	0.32			
	16-30	5-10	1.55-1.70	2.00-6.00	0.09-0.11	Low	0.0-0.5	0.20	0.49			
	30-60	---	---	0.00-0.01	---	---	---	---	---			
Ricert-----	0-8	12-20	1.40-1.55	2.00-6.00	0.10-0.12	Low	0.0-0.8	0.20	0.37	4	4	86
	8-18	25-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	0.0-0.5	0.32	0.32			
	18-26	22-32	1.40-1.60	0.60-2.00	0.17-0.19	Moderate	0.0-0.5	0.37	0.43			
	26-60	6-16	1.40-1.55	2.00-6.00	0.03-0.07	Low	0.0-0.2	0.05	0.20			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
481 (con.): Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
484: Yody-----	0-7	5-10	1.35-1.50	2.00-6.00	0.07-0.09	Low	0.7-2.0	0.20	0.32	2	4	86
	7-16	20-35	1.30-1.50	0.60-2.00	0.15-0.18	Moderate	0.5-1.0	0.20	0.32			
	16-30	5-10	1.55-1.70	2.00-6.00	0.09-0.11	Low	0.0-0.5	0.20	0.49			
	30-60	---	---	0.00-0.01	---		---	---	---			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
491: Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
Rebel-----	0-11	8-15	1.35-1.50	2.00-6.00	0.14-0.17	Low	0.8-2.0	0.43	0.43	5	5	56
	11-60	10-18	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.6	0.20	0.24			
Wholan-----	0-6	5-15	1.35-1.50	0.60-2.00	0.15-0.17	Low	0.0-0.5	0.55	0.55	4	3	86
	6-45	5-15	1.35-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.55	0.55			
	45-60	2-10	1.40-1.60	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.37			
492: Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
Rebel-----	0-11	8-15	1.35-1.50	2.00-6.00	0.14-0.17	Low	0.8-2.0	0.43	0.43	5	5	56
	11-60	10-18	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.6	0.20	0.24			
494: Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.06-0.09	Low	0.0-0.5	0.05	0.24	2	8	---
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			
Rebel-----	0-11	8-15	1.35-1.50	2.00-6.00	0.14-0.17	Low	0.8-2.0	0.43	0.43	5	5	56
	11-60	10-18	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.6	0.20	0.24			
500: Louderback-----	0-4	2-8	1.50-1.65	6.00-20.00	0.05-0.07	Low	0.5-1.0	0.20	0.20	5	1	220
	4-31	2-8	1.50-1.65	6.00-20.00	0.05-0.07	Low	0.5-1.0	0.20	0.20			
	31-60	5-10	1.40-1.60	0.60-2.00	0.09-0.10	Low	0.0-0.5	0.24	0.28			
Rustigate-----	0-10	18-27	1.25-1.40	0.60-2.00	0.19-0.21	Moderate	0.5-1.0	0.49	0.49	5	4L	86
	10-33	18-27	1.30-1.50	0.60-2.00	0.16-0.18	Moderate	0.0-0.5	0.43	0.43			
	33-60	8-20	1.35-1.55	0.60-2.00	0.12-0.16	Moderate	0.0-0.5	0.43	0.43			
Isolda-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.28	0.28	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.24	0.24			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
511: Grumblen-----	0-4	16-24	1.25-1.45	0.60-2.00	0.07-0.10	Low	0.8-2.0	0.15	0.49	1	7	38
	4-18	35-50	1.25-1.45	0.06-0.20	0.07-0.11	Moderate	0.0-0.5	0.10	0.32			
	18-22	---	---	0.00-0.01	---		---	---	---			
Pickup-----	0-10	14-22	1.15-1.35	0.20-0.60	0.08-0.10	Low	1.0-2.0	0.15	0.49	2	7	38
	10-36	40-55	1.20-1.35	0.06-0.20	0.10-0.13	Moderate	0.5-2.0	0.10	0.32			
	36-40	---	---	0.00-0.01	---		---	---	---			
520: Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.08-0.11	Low	1.0-2.0	0.15	0.49	5	7	38
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.5-0.8	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
Bluewing-----	0-7	3-10	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24	5	4	86
	7-60	3-10	1.55-1.75	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
Inmo-----	0-8	3-8	1.45-1.65	>20.00	0.05-0.08	Low	0.0-0.5	0.10	0.20	5	3	86
	8-40	2-8	1.50-1.65	>20.00	0.02-0.04	Low	0.0-0.5	0.05	0.24			
	40-60	5-10	1.55-1.70	>20.00	0.04-0.07	Low	0.0-0.5	0.05	0.15			
530: Cleaver-----	0-4	7-20	1.40-1.55	0.60-2.00	0.10-0.13	Moderate	0.0-0.5	0.20	0.32	1	6	48
	4-12	25-35	1.30-1.50	0.06-0.20	0.12-0.16	Moderate	0.0-0.5	0.20	0.37			
	12-60	---	---	0.00-0.01	---		---	---	---			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.37	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
Bluewing-----	0-7	3-10	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24	5	4	86
	7-60	3-10	1.55-1.75	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
532: Cleaver-----	0-4	7-20	1.40-1.55	0.60-2.00	0.10-0.13	Moderate	0.0-0.5	0.20	0.32	1	6	48
	4-12	25-35	1.30-1.50	0.06-0.20	0.12-0.16	Moderate	0.0-0.5	0.20	0.37			
	12-60	---	---	0.00-0.01	---		---	---	---			
Ricert-----	0-8	12-20	1.40-1.55	2.00-6.00	0.10-0.12	Low	0.0-0.8	0.20	0.37	4	6	48
	8-18	25-35	1.30-1.50	0.20-0.60	0.18-0.20	Moderate	0.0-0.5	0.32	0.32			
	18-26	22-32	1.40-1.60	0.60-2.00	0.17-0.19	Moderate	0.0-0.5	0.37	0.43			
	26-60	6-16	1.40-1.55	2.00-6.00	0.03-0.07	Low	0.0-0.2	0.05	0.20			
Barnmot-----	0-2	40-50	1.25-1.45	0.06-0.20	0.12-0.14	High	0.0-0.7	0.17	0.28	5	6	48
	2-60	35-55	1.30-1.50	0.00-0.06	0.13-0.15	High	0.0-0.5	0.24	0.24			
533: Cleaver-----	0-4	7-20	1.40-1.55	0.60-2.00	0.10-0.13	Moderate	0.0-0.5	0.20	0.32	1	6	48
	4-12	25-35	1.30-1.50	0.06-0.20	0.12-0.16	Moderate	0.0-0.5	0.20	0.37			
	12-60	---	---	0.00-0.01	---		---	---	---			
Buffaran-----	0-7	20-27	1.10-1.25	0.20-0.60	0.12-0.15	Moderate	2.0-4.0	0.32	0.55	1	7	38
	7-15	35-50	1.15-1.30	0.06-0.20	0.12-0.15	High	0.0-1.0	0.24	0.32			
	15-60	---	---	0.00-0.01	---		---	---	---			
535: Cleaver-----	0-4	5-12	1.40-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.15	0.28	1	4	86
	4-12	25-35	1.30-1.50	0.06-0.20	0.12-0.16	Moderate	0.0-0.5	0.20	0.37			
	12-60	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
535 (con.): Bundorf-----	0-2	10-27	1.30-1.50	0.60-2.00	0.04-0.07	Low	0.0-0.5	0.28	0.43	1	6	48
	2-11	35-50	1.30-1.50	0.06-0.20	0.16-0.18	High	0.0-0.5	0.32	0.32			
	11-14	35-50	1.30-1.50	0.06-0.20	0.09-0.11	High	0.0-0.5	0.10	0.37			
	14-45	---	---	0.00-0.01	---		---	---	---			
536: Cleaver-----	0-4	5-12	1.40-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.15	0.28	1	4	86
	4-12	25-35	1.30-1.50	0.06-0.20	0.12-0.16	Moderate	0.0-0.5	0.20	0.37			
	12-60	---	---	0.00-0.01	---		---	---	---			
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
537: Cleaver-----	0-4	5-12	1.40-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.15	0.28	1	4	86
	4-12	25-35	1.30-1.50	0.06-0.20	0.12-0.16	Moderate	0.0-0.5	0.20	0.37			
	12-60	---	---	0.00-0.01	---		---	---	---			
Otomo-----	0-3	5-18	1.45-1.65	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.28	0.32	1	4	86
	3-12	5-18	1.45-1.65	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.15	0.32			
	12-22	---	---	0.00-20.00	---		---	---	---			
	22-60	5-10	1.50-1.70	2.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
538: Cleaver-----	0-4	5-12	1.40-1.55	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.28	1	5	56
	4-12	25-35	1.30-1.50	0.06-0.20	0.12-0.16	Moderate	0.0-0.5	0.20	0.37			
	12-60	---	---	0.00-0.01	---		---	---	---			
Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.11-0.14	Low	0.0-0.5	0.28	0.55	5	4	86
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.28			
Roic-----	0-1	10-15	1.30-1.50	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.32	1	5	56
	1-6	12-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.43	0.43			
	6-10	---	---	0.00-0.01	---		---	---	---			
540: Douhide-----	0-7	20-27	1.20-1.40	0.20-0.60	0.10-0.12	Moderate	1.0-3.0	0.15	0.55	1	7	38
	7-15	35-50	1.25-1.45	0.06-0.20	0.08-0.12	Moderate	0.0-1.0	0.15	0.49			
	15-19	---	---	0.00-0.01	---		---	---	---			
Itca-----	0-4	15-27	1.15-1.30	0.60-2.00	0.16-0.18	Moderate	1.0-3.0	0.10	0.32	1	6	48
	4-16	35-45	1.25-1.45	0.06-0.20	0.14-0.16	Moderate	0.5-2.0	0.10	0.32			
	16-20	---	---	0.00-0.01	---		---	---	---			
Ravenswood-----	0-8	14-22	1.15-1.35	0.60-2.00	0.15-0.18	Moderate	1.0-3.0	0.24	0.37	2	6	48
	8-12	32-40	1.25-1.45	0.06-0.20	0.14-0.16	Moderate	0.5-2.0	0.24	0.43			
	12-23	35-50	1.20-1.40	0.06-0.20	0.14-0.16	Moderate	0.5-1.0	0.10	0.32			
	23-27	---	---	0.00-0.01	---		---	---	---			
551: Yerington-----	0-3	0-4	1.40-1.60	6.00-20.00	0.08-0.12	Low	0.5-0.8	0.17	0.17	5	2	134
	3-60	2-5	1.40-1.60	6.00-20.00	0.07-0.12	Low	0.0-0.5	0.20	0.24			
560: Rock Outcrop.												

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
560 (con.):												
Izod-----	0-4	18-25	1.20-1.35	0.60-2.00	0.07-0.10	Low	1.0-2.0	0.05	0.43	1	8	---
	4-8	18-25	1.20-1.30	0.60-2.00	0.05-0.11	Low	0.5-1.0	0.10	0.43			
	8-12	---	---	0.00-0.01	---		---	---	---			
572:												
Rawe-----	0-1	6-12	1.40-1.55	2.00-6.00	0.09-0.11	Low	0.0-0.5	0.24	0.43	3	4	86
	1-10	40-50	1.20-1.35	0.06-0.20	0.12-0.14	High	0.0-0.5	0.24	0.32			
	10-60	5-8	1.45-1.60	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.10	0.20			
Malpais-----	0-3	5-15	1.35-1.55	2.00-6.00	0.04-0.07	Low	0.0-0.5	0.15	0.28	5	4	86
	3-15	10-18	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.10	0.43			
	15-60	10-18	1.40-1.60	2.00-6.00	0.07-0.10	Low	0.0-0.5	0.10	0.37			
580:												
Welch-----	0-24	15-20	1.25-1.40	0.60-2.00	0.16-0.18	Low	2.0-4.0	0.32	0.32	5	5	56
	24-60	27-35	1.30-1.45	0.20-0.60	0.16-0.21	Moderate	0.5-3.0	0.28	0.55			
590:												
Rebel-----	0-11	8-15	1.35-1.50	2.00-6.00	0.14-0.17	Low	0.8-2.0	0.43	0.43	5	5	56
	11-60	10-18	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.6	0.20	0.24			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
Yody-----	0-7	5-10	1.35-1.50	2.00-6.00	0.07-0.09	Low	0.7-2.0	0.20	0.32	2	4	86
	7-16	20-35	1.30-1.50	0.60-2.00	0.15-0.18	Moderate	0.5-1.0	0.20	0.32			
	16-30	5-10	1.55-1.70	2.00-6.00	0.09-0.11	Low	0.0-0.5	0.20	0.49			
	30-60	---	---	0.00-0.01	---		---	---	---			
591:												
Rebel-----	0-11	8-15	1.35-1.50	2.00-6.00	0.14-0.17	Low	0.8-2.0	0.43	0.43	5	5	56
	11-60	10-18	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.6	0.20	0.24			
592:												
Rebel-----	0-11	8-15	1.35-1.50	2.00-6.00	0.14-0.17	Low	0.8-2.0	0.43	0.43	5	5	56
	11-60	10-18	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.6	0.20	0.24			
Wholan-----	0-6	5-15	1.35-1.50	0.60-2.00	0.15-0.17	Low	0.0-0.5	0.55	0.55	4	3	86
	6-45	5-15	1.35-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.55	0.55			
	45-60	2-10	1.40-1.60	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.37			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
600:												
Hooten-----	0-1	0-5	1.50-1.65	6.00-20.00	0.03-0.05	Low	0.0-0.5	0.10	0.20	2	4	86
	1-6	25-35	1.25-1.40	0.20-0.60	0.09-0.11	Low	0.0-0.5	0.10	0.28			
	6-12	---	---	0.00-0.20	---		---	---	---			
	12-19	0-5	1.50-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.17	0.20			
	19-60	5-15	1.40-1.60	0.60-2.00	0.16-0.18	Low	0.0-0.5	0.49	0.49			
Bango-----	0-2	5-12	1.40-1.55	2.00-6.00	0.09-0.12	Low	0.0-0.5	0.15	0.32	5	3	86
	2-12	20-30	1.40-1.50	0.20-0.60	0.16-0.19	Moderate	0.0-0.5	0.43	0.49			
	12-60	18-25	1.50-1.70	0.20-0.60	0.15-0.18	Moderate	0.0-0.5	0.37	0.43			
Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.28	0.28	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.24	0.24			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
610: Barnmot-----	0-2	40-50	1.25-1.45	0.06-0.20	0.12-0.14	High	0.0-0.7	0.17	0.28	5	6	48
	2-60	35-55	1.30-1.50	0.00-0.06	0.13-0.15	High	0.0-0.5	0.24	0.24			
Bluewing-----	0-7	3-8	1.40-1.60	6.00-20.00	0.04-0.06	Low	0.3-0.5	0.10	0.24	5	4	86
	7-60	3-8	1.45-1.65	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
Badland-----	0-6	35-70	1.60-1.80	0.00-0.06	0.05-0.07	High	0.0-0.1	0.37	0.37	5	5	56
	6-60	35-70	1.60-1.80	0.00-0.06	0.05-0.07	High	0.0-0.1	0.37	0.37			
620: Findout-----	0-3	12-18	1.25-1.40	2.00-6.00	0.08-0.12	Low	0.5-1.0	0.17	0.49	1	6	48
	3-8	25-35	1.10-1.30	0.20-0.60	0.10-0.13	Moderate	0.5-1.0	0.15	0.43			
	8-14	18-27	1.10-1.30	0.60-2.00	0.10-0.13	Moderate	0.0-0.5	0.15	0.43			
	14-18	---	---	0.00-0.01	---		---	---	---			
Uripnes-----	0-4	10-18	1.40-1.55	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.17	0.32	1	5	56
	4-21	---	---	0.00-20.00	---		---	---	---			
	21-25	---	---	0.00-20.00	---		---	---	---			
Singatse-----	0-4	7-15	1.40-1.60	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.17	0.43	1	6	48
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---		---	---	---			
621: Rock Outcrop.												
Findout-----	0-3	12-18	1.25-1.40	2.00-6.00	0.08-0.12	Low	0.5-1.0	0.17	0.49	1	6	48
	3-8	25-35	1.10-1.30	0.20-0.60	0.10-0.13	Moderate	0.5-1.0	0.15	0.43			
	8-14	18-27	1.10-1.30	0.60-2.00	0.10-0.13	Moderate	0.0-0.5	0.15	0.43			
	14-18	---	---	0.00-0.01	---		---	---	---			
Izod-----	0-4	18-25	1.20-1.35	0.60-2.00	0.07-0.10	Low	1.0-2.0	0.05	0.43	1	8	---
	4-8	18-25	1.20-1.30	0.60-2.00	0.05-0.11	Low	0.5-1.0	0.10	0.43			
	8-12	---	---	0.00-0.01	---		---	---	---			
622: Rock Outcrop.												
Findout-----	0-3	12-18	1.25-1.40	2.00-6.00	0.08-0.12	Low	0.5-1.0	0.17	0.49	1	6	48
	3-8	25-35	1.10-1.30	0.20-0.60	0.10-0.13	Moderate	0.5-1.0	0.15	0.43			
	8-14	18-27	1.10-1.30	0.60-2.00	0.10-0.13	Moderate	0.0-0.5	0.15	0.43			
	14-18	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
640: Mazuma-----	0-5	5-15	1.40-1.55	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	4L	86
	5-25	5-15	1.40-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.43	0.43			
	25-60	5-15	1.45-1.65	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.24	0.32			
Bango-----	0-2	5-12	1.40-1.55	2.00-6.00	0.09-0.12	Low	0.0-0.5	0.15	0.32	5	3	86
	2-12	20-30	1.40-1.50	0.20-0.60	0.16-0.19	Moderate	0.0-0.5	0.43	0.49			
	12-60	18-25	1.50-1.70	0.20-0.60	0.15-0.18	Moderate	0.0-0.5	0.37	0.43			
643: Mazuma-----	0-5	5-15	1.40-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.28	0.28	5	3	86
	5-25	5-15	1.40-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.43	0.43			
	25-60	5-15	1.45-1.65	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.24	0.32			



TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
643 (con.): Bluewing-----	0-5	6-10	1.40-1.60	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.32	5	5	56
	5-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			
644: Mazuma-----	0-5	5-15	1.40-1.55	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	4L	86
	5-25	5-15	1.40-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.43	0.43			
	25-60	5-15	1.45-1.65	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.24	0.32			
Toulon-----	0-2	10-12	1.45-1.65	2.00-6.00	0.06-0.10	Low	0.0-0.5	0.28	0.43	3	6	48
	2-16	12-15	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.43			
	16-60	0-3	1.50-1.65	>20.00	0.03-0.06	Low	0.0-0.5	0.05	0.15			
Chuckles-----	0-4	18-27	1.35-1.50	0.20-0.60	0.19-0.21	Low	0.0-0.7	0.55	0.55	5	4L	86
	4-17	18-27	1.25-1.45	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	17-60	18-27	1.35-1.55	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
645: Mazuma-----	0-9	10-14	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.0-0.5	0.43	0.49	5	3	86
	9-60	5-15	1.45-1.65	2.00-6.00	0.10-0.14	Low	0.0-0.5	0.24	0.55			
650: Rock Outcrop.												
Labou-----	0-4	5-10	1.35-1.50	0.60-2.00	0.09-0.12	Low	0.0-0.5	0.15	0.28	1	4	86
	4-11	35-45	1.20-1.35	0.00-0.06	0.09-0.13	Moderate	0.0-0.5	0.10	0.32			
	11-15	---	---	0.00-0.01	---		---	---	---			
660: Loomer-----	0-7	15-25	1.10-1.25	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.15	0.32	1	7	38
	7-17	35-50	1.30-1.45	0.06-0.20	0.08-0.10	Moderate	0.5-2.0	0.05	0.43			
	17-21	---	---	0.00-0.01	---		---	---	---			
Duco-----	0-4	10-20	1.35-1.50	0.60-2.00	0.08-0.10	Low	1.0-2.0	0.28	0.37	1	6	48
	4-11	27-35	1.40-1.60	0.20-0.60	0.08-0.10	Moderate	0.5-2.0	0.05	0.32			
	11-15	---	---	0.00-0.01	---		---	---	---			
662: Loomer-----	0-7	15-25	1.10-1.25	0.60-2.00	0.12-0.14	Low	1.0-2.0	0.17	0.32	1	6	48
	7-17	35-50	1.30-1.45	0.06-0.20	0.08-0.10	Moderate	0.5-2.0	0.05	0.43			
	17-21	---	---	0.00-0.01	---		---	---	---			
Bombadil-----	0-5	12-20	1.35-1.50	0.60-2.00	0.11-0.14	Low	1.0-2.0	0.28	0.55	1	6	48
	5-8	18-27	1.25-1.45	0.20-0.60	0.15-0.17	Moderate	1.0-2.0	0.32	0.49			
	8-12	25-35	1.25-1.45	0.20-0.60	0.16-0.18	Moderate	0.5-1.0	0.28	0.43			
	12-16	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	8-20	1.35-1.50	2.00-6.00	0.08-0.10	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
670: Celeton-----	0-2	8-15	0.85-1.10	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.49	1	6	48
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---		---	---	---			
Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.06-0.07	Low	0.0-0.5	0.15	0.32	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.32			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
670 (con.): Bedwyr-----	0-2	18-27	1.15-1.35	0.20-0.60	0.12-0.15	Low	0.0-0.7	0.15	0.43	2	7	38
	2-10	45-55	1.20-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.32	0.32			
	10-13	45-60	1.15-1.35	0.00-0.06	0.11-0.13	High	0.0-0.5	0.20	0.32			
	13-23	---	---	0.00-0.01	---		---	---	---			
671: Celeton-----	0-2	8-15	0.85-1.10	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.49	1	6	48
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---		---	---	---			
Bedwyr-----	0-2	18-27	1.15-1.35	0.20-0.60	0.12-0.15	Low	0.0-0.7	0.15	0.43	2	7	38
	2-10	45-55	1.20-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.32	0.32			
	10-13	45-60	1.15-1.35	0.00-0.06	0.11-0.13	High	0.0-0.5	0.20	0.32			
	13-23	---	---	0.00-0.01	---		---	---	---			
Watoopah-----	0-2	1-5	1.50-1.65	>20.00	0.03-0.06	Low	0.5-1.0	0.24	0.24	3	1	220
	2-16	10-18	1.35-1.55	2.00-6.00	0.09-0.14	Low	0.5-1.0	0.10	0.32			
	16-29	0-5	1.50-1.65	2.00-6.00	0.03-0.12	Low	0.0-0.5	0.05	0.28			
	29-60	0-5	1.50-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.20			
672: Celeton-----	0-2	5-15	0.90-1.10	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.10	0.32	1	5	56
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---		---	---	---			
Barnmot-----	0-2	40-50	1.25-1.45	0.06-0.20	0.12-0.14	High	0.0-0.7	0.17	0.28	5	6	48
	2-60	35-55	1.30-1.50	0.00-0.06	0.13-0.15	High	0.0-0.5	0.24	0.24			
Chilper-----	0-2	5-10	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.0-0.5	0.37	0.64	2	4	86
	2-5	5-10	1.40-1.55	0.60-2.00	0.15-0.17	Low	0.0-0.5	0.55	0.64			
	5-25	35-50	1.30-1.45	0.00-0.06	0.14-0.21	High	0.0-0.5	0.43	0.49			
	25-60	5-10	1.55-1.70	0.20-0.60	0.03-0.05	Low	0.0-0.5	0.10	0.32			
680: Bombadil-----	0-5	12-20	1.35-1.50	0.60-2.00	0.11-0.14	Low	1.0-2.0	0.28	0.55	1	6	48
	5-8	18-27	1.25-1.45	0.20-0.60	0.15-0.17	Moderate	1.0-2.0	0.32	0.49			
	8-12	25-35	1.25-1.45	0.20-0.60	0.16-0.18	Moderate	0.5-1.0	0.28	0.43			
	12-16	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	8-20	1.35-1.50	2.00-6.00	0.08-0.10	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
691: Osobb-----	0-3	12-18	1.30-1.45	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.17	0.64	1	5	56
	3-17	12-18	1.35-1.50	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.15	0.32			
	17-18	---	---	0.00-0.01	---		---	---	---			
	18-22	---	---	0.00-0.01	---		---	---	---			
Singatse-----	0-4	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.28	1	5	56
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---		---	---	---			
Pirouette-----	0-4	10-18	1.40-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.24	0.64	1	5	56
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
700:												
Clan Alpine-----	0-10	18-24	1.10-1.25	0.60-2.00	0.14-0.16	Low	1.0-3.0	0.17	0.49	3	7	38
	10-39	25-35	1.30-1.50	0.20-0.60	0.12-0.14	Moderate	0.5-2.0	0.17	0.43			
	39-43	---	---	0.00-0.01	---		---	---	---			
Itca-----	0-4	15-27	1.15-1.30	0.60-2.00	0.16-0.18	Moderate	1.0-3.0	0.20	0.32	1	6	48
	4-16	35-45	1.25-1.45	0.06-0.20	0.14-0.16	Moderate	0.5-2.0	0.10	0.32			
	16-20	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	8-20	1.35-1.50	2.00-6.00	0.08-0.10	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
710:												
Luning-----	0-3	3-10	1.50-1.65	6.00-20.00	0.06-0.08	Low	0.0-0.5	0.24	0.24	5	2	134
	3-60	3-10	1.50-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
Izo-----	0-4	0-5	1.50-1.70	>20.00	0.02-0.04	Low	0.0-0.5	0.05	0.20	5	3	86
	4-60	0-5	1.40-1.60	6.00-20.00	0.03-0.05	Low	0.0-0.5	0.02	0.10			
730:												
Hooplite-----	0-4	12-20	1.35-1.50	2.00-6.00	0.06-0.09	Low	0.6-2.0	0.15	0.32	1	5	56
	4-8	22-30	1.30-1.50	0.60-2.00	0.08-0.11	Low	0.5-1.0	0.15	0.49			
	8-18	---	---	0.00-0.01	---		---	---	---			
Theon-----	0-3	10-20	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.05	0.32	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.15	0.55			
	12-16	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	10-20	1.35-1.50	0.60-2.00	0.09-0.13	Low	1.0-2.0	0.17	0.32	1	5	56
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
731:												
Hooplite-----	0-4	12-20	1.35-1.50	2.00-6.00	0.06-0.09	Low	0.6-2.0	0.15	0.32	1	5	56
	4-8	22-30	1.30-1.50	0.60-2.00	0.08-0.11	Low	0.5-1.0	0.15	0.49			
	8-18	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	10-20	1.35-1.50	0.60-2.00	0.09-0.13	Low	1.0-2.0	0.17	0.32	1	5	56
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
Singatse-----	0-4	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.28	1	5	56
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---		---	---	---			
732:												
Hooplite-----	0-4	12-20	1.35-1.50	2.00-6.00	0.06-0.09	Low	0.6-2.0	0.10	0.32	1	5	56
	4-9	22-30	1.30-1.50	0.60-2.00	0.08-0.11	Low	0.5-1.0	0.15	0.49			
	9-13	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	8-20	1.35-1.50	2.00-6.00	0.08-0.10	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
Puett-----	0-3	5-10	1.30-1.50	2.00-6.00	0.13-0.15	Low	0.5-1.0	0.28	0.32	2	3	86
	3-11	5-10	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.5	0.28	0.32			
	11-20	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
733:												
Hooplite-----	0-4	12-20	1.35-1.50	2.00-6.00	0.06-0.09	Low	0.6-2.0	0.15	0.32	1	5	56
	4-8	22-30	1.30-1.50	0.60-2.00	0.08-0.11	Low	0.5-1.0	0.15	0.49			
	8-18	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	8-20	1.35-1.50	2.00-6.00	0.08-0.10	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
Jung-----	0-7	10-15	1.35-1.50	0.60-2.00	0.14-0.16	Low	1.0-2.0	0.37	0.43	1	6	48
	7-15	35-45	1.45-1.60	0.06-0.20	0.10-0.14	Moderate	0.5-0.8	0.17	0.55			
	15-19	---	---	0.00-0.01	---		---	---	---			
734:												
Hooplite-----	0-4	12-20	1.35-1.50	2.00-6.00	0.06-0.09	Low	0.6-2.0	0.15	0.32	1	5	56
	4-8	22-30	1.30-1.50	0.60-2.00	0.08-0.11	Low	0.5-1.0	0.15	0.49			
	8-18	---	---	0.00-0.01	---		---	---	---			
Theon-----	0-3	10-20	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.05	0.32	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.15	0.55			
	12-16	---	---	0.00-0.01	---		---	---	---			
Puett-----	0-3	5-10	1.30-1.50	2.00-6.00	0.13-0.15	Low	0.5-1.0	0.28	0.32	2	3	86
	3-11	5-10	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.5	0.28	0.32			
	11-20	---	---	0.00-0.01	---		---	---	---			
735:												
Hooplite-----	0-4	12-20	1.35-1.50	2.00-6.00	0.06-0.09	Low	0.6-2.0	0.15	0.32	1	5	56
	4-8	22-30	1.30-1.50	0.60-2.00	0.08-0.11	Low	0.5-1.0	0.15	0.49			
	8-18	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	7	38
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
Duco-----	0-4	10-20	1.35-1.50	0.60-2.00	0.07-0.08	Low	1.0-2.0	0.17	0.32	1	5	56
	4-11	27-35	1.40-1.60	0.20-0.60	0.08-0.10	Moderate	0.5-2.0	0.05	0.32			
	11-15	---	---	0.00-0.01	---		---	---	---			
740:												
Packer-----	0-10	14-20	1.25-1.45	0.60-2.00	0.10-0.13	Low	1.0-2.0	0.15	0.49	5	8	---
	10-16	20-30	1.35-1.50	0.60-2.00	0.08-0.11	Low	0.5-2.0	0.10	0.43			
	16-60	10-16	1.40-1.55	2.00-6.00	0.05-0.08	Low	0.5-1.0	0.10	0.43			
Layview-----	0-5	15-20	1.25-1.45	2.00-6.00	0.06-0.08	Low	1.0-3.0	0.10	0.37	1	8	---
	5-13	22-35	1.30-1.50	0.20-0.60	0.08-0.10	Low	1.0-2.0	0.10	0.32			
	13-17	---	---	0.00-0.01	---		---	---	---			
Hapgood-----	0-19	15-25	1.05-1.20	0.60-2.00	0.08-0.10	Low	2.0-3.0	0.17	0.49	3	8	---
	19-30	18-27	1.15-1.35	0.60-2.00	0.08-0.10	Low	0.5-2.0	0.10	0.24			
	30-46	10-15	1.35-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.10	0.32			
	46-52	---	---	0.00-0.01	---		---	---	---			
741:												
Rock Outcrop.												
Packer-----	0-10	14-20	1.25-1.45	0.60-2.00	0.08-0.11	Low	1.0-2.0	0.10	0.43	5	8	---
	10-16	20-30	1.35-1.50	0.60-2.00	0.08-0.11	Low	0.5-2.0	0.10	0.43			
	16-60	10-16	1.40-1.55	2.00-6.00	0.05-0.08	Low	0.5-1.0	0.10	0.43			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
741 (con.): Hapgood-----	0-19	15-20	1.05-1.20	0.60-2.00	0.14-0.16	Low	2.0-3.0	0.28	0.49	3	6	48
	19-46	18-27	1.25-1.35	0.60-2.00	0.07-0.09	Low	0.5-2.0	0.10	0.32			
	46-52	---	---	0.00-0.01	---		---	---	---			
760: Burnborough-----	0-17	10-25	1.25-1.45	0.60-2.00	0.10-0.13	Moderate	1.0-2.0	0.15	0.43	5	7	38
	17-60	18-35	1.30-1.50	0.60-2.00	0.08-0.11	Moderate	0.0-1.0	0.15	0.43			
Cleavage-----	0-7	15-25	1.15-1.35	0.60-2.00	0.12-0.14	Low	1.0-3.0	0.10	0.32	1	7	38
	7-14	20-35	1.25-1.45	0.20-0.60	0.10-0.12	Low	0.5-1.0	0.10	0.49			
	14-18	---	---	0.00-0.01	---		---	---	---			
Welch-----	0-24	30-35	1.20-1.35	0.20-0.60	0.19-0.21	Moderate	2.0-4.0	0.32	0.32	5	6	48
	24-60	27-35	1.30-1.45	0.20-0.60	0.16-0.21	Moderate	0.5-3.0	0.28	0.55			
761: Burnborough-----	0-17	10-25	1.25-1.45	0.60-2.00	0.10-0.13	Moderate	1.0-2.0	0.15	0.43	5	7	38
	17-60	18-35	1.30-1.50	0.60-2.00	0.08-0.11	Moderate	0.0-1.0	0.15	0.43			
Cleavage-----	0-7	15-25	1.15-1.35	0.60-2.00	0.12-0.14	Low	1.0-3.0	0.10	0.32	1	7	38
	7-14	20-35	1.25-1.45	0.20-0.60	0.10-0.12	Low	0.5-1.0	0.10	0.49			
	14-18	---	---	0.00-0.01	---		---	---	---			
Reluctan-----	0-9	15-22	1.15-1.35	0.60-2.00	0.09-0.11	Low	2.0-4.0	0.15	0.55	2	7	38
	9-25	25-35	1.35-1.55	0.20-0.60	0.12-0.15	Moderate	0.5-2.0	0.24	0.43			
	25-29	---	---	0.00-0.01	---		---	---	---			
770: Chilper-----	0-2	5-10	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.0-0.5	0.37	0.64	2	4	86
	2-5	5-10	1.40-1.55	0.60-2.00	0.15-0.17	Low	0.0-0.5	0.55	0.64			
	5-25	35-50	1.30-1.45	0.00-0.06	0.14-0.21	High	0.0-0.5	0.43	0.49			
	25-60	5-10	1.55-1.70	0.20-0.60	0.03-0.05	Low	0.0-0.5	0.10	0.32			
Bundorf-----	0-2	15-27	1.30-1.50	0.60-2.00	0.12-0.15	Moderate	0.0-0.5	0.28	0.55	1	6	48
	2-11	35-50	1.30-1.50	0.06-0.20	0.16-0.18	High	0.0-0.5	0.32	0.32			
	11-14	35-50	1.30-1.50	0.06-0.20	0.09-0.11	High	0.0-0.5	0.10	0.37			
	14-45	---	---	0.00-0.01	---		---	---	---			
Trocken-----	0-3	5-15	1.40-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	0.55	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			
772: Chilper-----	0-2	5-10	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.0-0.5	0.37	0.64	2	4	86
	2-5	5-10	1.40-1.55	0.60-2.00	0.15-0.17	Low	0.0-0.5	0.55	0.64			
	5-25	35-50	1.30-1.45	0.00-0.06	0.14-0.18	High	0.0-0.5	0.28	0.32			
	25-60	5-10	1.55-1.70	0.20-0.60	0.03-0.05	Low	0.0-0.5	0.05	0.32			
Trocken-----	0-3	5-15	1.40-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	0.55	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			
Jerval-----	0-4	5-10	1.40-1.55	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.17	0.49	5	4	86
	4-18	27-35	1.20-1.40	0.20-0.60	0.14-0.16	Moderate	0.0-0.5	0.24	0.43			
	18-60	5-12	1.35-1.50	2.00-6.00	0.06-0.07	Low	0.0-0.5	0.15	0.32			
790: Jacratz-----	0-2	25-35	1.10-1.30	0.20-0.60	0.13-0.15	Moderate	0.5-1.0	0.17	0.55	1	7	38
	2-8	25-35	1.10-1.30	0.20-0.60	0.15-0.18	Moderate	0.5-1.0	0.28	0.55			
	8-12	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
790 (con.): Nayfan-----	0-3	18-25	1.30-1.40	0.60-2.00	0.13-0.16	Moderate	1.0-2.0	0.24	0.43	3	6	48
	3-27	18-27	1.30-1.45	0.60-2.00	0.11-0.14	Moderate	0.5-1.0	0.20	0.37			
	27-31	---	---	0.00-0.01	---		---	---	---			
800: Bedwyr-----	0-2	18-27	1.15-1.35	0.20-0.60	0.12-0.15	Low	0.0-0.7	0.20	0.43	2	6	48
	2-10	45-55	1.20-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.32	0.32			
	10-13	45-60	1.15-1.35	0.00-0.06	0.11-0.13	High	0.0-0.5	0.20	0.32			
	13-23	---	---	0.00-0.01	---		---	---	---			
Celeton-----	0-2	8-15	0.85-1.10	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.49	1	6	48
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---		---	---	---			
802: Bedwyr-----	0-2	18-27	1.15-1.35	0.20-0.60	0.12-0.15	Low	0.0-0.7	0.15	0.43	2	7	38
	2-10	45-55	1.20-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.32	0.32			
	10-13	45-60	1.15-1.35	0.00-0.06	0.11-0.13	High	0.0-0.5	0.20	0.32			
	13-23	---	---	0.00-0.01	---		---	---	---			
Bedzee-----	0-7	20-27	1.15-1.30	0.60-2.00	0.12-0.14	Moderate	1.0-2.0	0.43	0.55	2	7	38
	7-17	40-60	1.15-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.28	0.49			
	17-21	---	---	0.00-0.01	---		---	---	---			
Jobpeak-----	0-8	10-18	1.40-1.55	0.60-2.00	0.06-0.10	Low	0.8-2.0	0.15	0.55	1	7	38
	8-18	---	---	0.00-0.01	---		---	---	---			
820: Aboten-----	0-5	8-18	1.45-1.60	2.00-6.00	0.04-0.06	Low	0.5-1.0	0.05	0.32	2	5	56
	5-19	25-35	1.30-1.50	0.06-0.20	0.15-0.19	Moderate	0.0-0.5	0.28	0.37			
	19-21	---	---	0.00-0.20	---		---	---	---			
	21-60	3-8	1.50-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
Inmo-----	0-8	8-15	1.35-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.32	5	5	56
	8-40	1-6	1.50-1.65	>20.00	0.02-0.04	Low	0.0-0.5	0.05	0.24			
	40-60	2-8	1.55-1.70	>20.00	0.04-0.07	Low	0.0-0.5	0.05	0.15			
Bluewing-----	0-7	3-10	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24	5	4	86
	7-60	3-10	1.55-1.75	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
830: Corral-----	0-3	15-25	1.35-1.50	0.60-2.00	0.10-0.13	Low	1.0-2.0	0.24	0.37	2	6	48
	3-14	20-35	1.35-1.50	0.20-0.60	0.13-0.19	Moderate	0.0-0.5	0.32	0.43			
	14-18	---	---	0.00-0.01	---		---	---	---			
Celeton-----	0-2	8-15	0.85-1.10	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.32	1	4	86
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---		---	---	---			
Bedwyr-----	0-2	18-27	1.15-1.35	0.20-0.60	0.12-0.15	Low	0.0-0.7	0.20	0.43	2	7	38
	2-10	45-55	1.20-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.32	0.32			
	10-13	45-60	1.15-1.35	0.00-0.06	0.11-0.13	High	0.0-0.5	0.20	0.32			
	13-23	---	---	0.00-0.01	---		---	---	---			
840: Belate-----	0-12	10-18	1.25-1.40	0.60-2.00	0.10-0.12	Low	1.0-3.0	0.24	0.43	5	7	38
	12-60	18-30	1.20-1.35	0.20-0.60	0.12-0.14	Moderate	0.0-1.0	0.24	0.43			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
840 (con.):												
Roca-----	0-6	18-25	1.30-1.45	0.60-2.00	0.13-0.15	Low	1.0-2.0	0.10	0.37	2	7	38
	6-25	35-50	1.25-1.45	0.00-0.06	0.10-0.13	Moderate	0.0-0.5	0.10	0.32			
	25-29	---	---	0.00-0.01	---		---	---	---			
Cleavage-----	0-7	15-25	1.15-1.35	0.60-2.00	0.12-0.14	Low	1.0-3.0	0.10	0.32	1	7	38
	7-14	20-35	1.25-1.45	0.20-0.60	0.10-0.12	Low	0.5-1.0	0.10	0.49			
	14-18	---	---	0.00-0.01	---		---	---	---			
850:												
Walti-----	0-4	10-20	1.30-1.45	0.60-2.00	0.12-0.14	Low	1.0-3.0	0.15	0.43	2	7	38
	4-10	27-35	1.30-1.50	0.06-0.20	0.16-0.20	Moderate	1.0-2.0	0.20	0.43			
	10-22	50-60	1.20-1.40	0.00-0.06	0.12-0.15	High	0.5-2.0	0.15	0.37			
	22-26	---	---	0.00-0.01	---		---	---	---			
Roca-----	0-6	18-25	1.30-1.45	0.60-2.00	0.13-0.15	Low	1.0-2.0	0.10	0.37	2	7	38
	6-25	35-50	1.25-1.45	0.00-0.06	0.10-0.13	Moderate	0.0-0.5	0.10	0.32			
	25-29	---	---	0.00-0.01	---		---	---	---			
Belate-----	0-12	10-18	1.25-1.40	0.60-2.00	0.10-0.12	Low	1.0-3.0	0.24	0.43	5	6	48
	12-60	18-30	1.20-1.35	0.20-0.60	0.12-0.14	Moderate	0.0-1.0	0.24	0.43			
860:												
Teguro-----	0-6	10-18	1.30-1.45	2.00-6.00	0.06-0.10	Low	1.0-3.0	0.20	0.43	1	7	38
	6-16	25-35	1.30-1.50	0.20-0.60	0.14-0.17	Moderate	0.5-2.0	0.20	0.37			
	16-20	---	---	0.00-0.01	---		---	---	---			
Colbar-----	0-6	10-20	1.30-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.10	0.43	2	7	38
	6-16	22-35	1.25-1.45	0.20-0.60	0.13-0.15	Moderate	0.0-0.5	0.17	0.32			
	16-21	10-22	1.35-1.55	2.00-6.00	0.12-0.14	Low	0.0-0.5	0.20	0.37			
	21-31	---	---	0.00-0.01	---		---	---	---			
Cleavage-----	0-7	15-25	1.15-1.35	0.60-2.00	0.12-0.14	Low	1.0-3.0	0.10	0.32	1	7	38
	7-14	20-35	1.25-1.45	0.20-0.60	0.10-0.12	Low	0.5-1.0	0.10	0.49			
	14-18	---	---	0.00-0.01	---		---	---	---			
870:												
Chill-----	0-4	5-10	1.35-1.50	2.00-6.00	0.07-0.09	Low	0.5-2.0	0.05	0.32	2	5	56
	4-8	25-35	1.30-1.50	0.20-0.60	0.10-0.13	Moderate	0.5-1.0	0.05	0.37			
	8-22	---	---	0.00-20.00	---		---	---	---			
Cleavage-----	0-4	15-25	1.15-1.35	0.60-2.00	0.15-0.17	Low	1.0-3.0	0.20	0.37	1	5	56
	4-18	20-35	1.25-1.45	0.20-0.60	0.10-0.12	Low	1.0-2.0	0.10	0.55			
	18-22	---	---	0.00-0.01	---		---	---	---			
880:												
Coppereid-----	0-2	10-18	1.20-1.40	0.60-2.00	0.12-0.14	Low	1.0-2.0	0.32	0.43	1	5	56
	2-9	10-18	1.20-1.40	0.60-2.00	0.14-0.16	Low	0.0-0.8	0.37	0.43			
	9-13	---	---	0.00-0.20	---		---	---	---			
Singatse-----	0-4	7-15	1.40-1.60	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.17	0.43	1	6	48
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---		---	---	---			
Findout-----	0-3	12-18	1.25-1.40	2.00-6.00	0.08-0.12	Low	0.5-1.0	0.17	0.49	1	6	48
	3-8	25-35	1.10-1.30	0.20-0.60	0.10-0.13	Moderate	0.5-1.0	0.15	0.43			
	8-14	18-27	1.10-1.30	0.60-2.00	0.10-0.13	Moderate	0.0-0.5	0.15	0.43			
	14-18	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
900:												
Playas-----	0-6	27-40	1.50-1.70	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37	---	4L	86
	6-60	35-70	1.60-1.80	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37			
901:												
Dune Land-----	0-6	0-1	1.50-1.60	6.00-20.00	0.04-0.05	Low	0.0-0.1	0.15	0.20	5	1	220
	6-60	0-1	1.50-1.60	6.00-20.00	0.03-0.05	Low	0.0-0.1	0.10	0.20			
Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17			
902:												
Badland-----	0-6	35-70	1.60-1.80	0.00-0.06	0.05-0.07	High	0.0-0.1	0.37	0.37	5	5	56
	6-60	35-70	1.60-1.80	0.00-0.06	0.05-0.07	High	0.0-0.1	0.37	0.37			
903:												
Badland-----	0-6	35-70	1.60-1.80	0.00-0.06	0.05-0.07	High	0.0-0.1	0.37	0.37	5	5	56
	6-60	35-70	1.60-1.80	0.00-0.06	0.05-0.07	High	0.0-0.1	0.37	0.37			
Rebel-----	0-11	8-15	1.35-1.50	2.00-6.00	0.14-0.17	Low	0.8-2.0	0.43	0.43	5	5	56
	11-60	10-18	1.35-1.55	2.00-6.00	0.13-0.15	Low	0.0-0.6	0.20	0.24			
Yody-----	0-7	5-10	1.35-1.50	2.00-6.00	0.07-0.09	Low	0.7-2.0	0.20	0.32	2	4	86
	7-16	20-35	1.30-1.50	0.60-2.00	0.15-0.18	Moderate	0.5-1.0	0.20	0.32			
	16-30	5-10	1.55-1.70	2.00-6.00	0.09-0.11	Low	0.0-0.5	0.20	0.49			
	30-60	---	---	0.00-0.01	---		---	---	---			
910:												
Rock Outcrop.												
Theriot-----	0-4	8-14	1.20-1.40	0.60-2.00	0.04-0.06	Low	0.0-1.0	0.17	0.43	1	6	48
	4-9	5-14	1.25-1.45	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.32			
	9-13	---	---	0.00-0.01	---		---	---	---			
Findout-----	0-3	12-18	1.25-1.40	2.00-6.00	0.08-0.12	Low	0.5-1.0	0.17	0.49	1	6	48
	3-8	25-35	1.10-1.30	0.20-0.60	0.10-0.13	Moderate	0.5-1.0	0.15	0.43			
	8-14	18-27	1.10-1.30	0.60-2.00	0.10-0.13	Moderate	0.0-0.5	0.15	0.43			
	14-18	---	---	0.00-0.01	---		---	---	---			
930:												
Layview-----	0-5	15-20	1.25-1.45	2.00-6.00	0.06-0.08	Low	1.0-3.0	0.10	0.37	1	8	---
	5-13	22-35	1.30-1.50	0.20-0.60	0.08-0.10	Low	1.0-2.0	0.10	0.32			
	13-17	---	---	0.00-0.01	---		---	---	---			
Packer-----	0-10	10-20	1.25-1.45	0.60-2.00	0.13-0.15	Low	2.0-4.0	0.15	0.43	3	8	---
	10-16	20-30	1.35-1.50	0.60-2.00	0.07-0.08	Low	1.0-2.0	0.17	0.43			
	16-42	10-15	1.40-1.55	2.00-6.00	0.05-0.07	Low	0.5-1.0	0.15	0.43			
	42-46	---	---	0.00-0.01	---		---	---	---			
Hapgood-----	0-19	15-25	1.05-1.20	0.60-2.00	0.14-0.16	Low	2.0-4.0	0.24	0.43	5	6	48
	19-46	15-25	1.15-1.35	0.60-2.00	0.08-0.10	Low	1.0-3.0	0.10	0.37			
	46-52	15-25	1.35-1.55	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	0.32			
940:												
Old Camp-----	0-3	10-20	1.30-1.45	0.60-2.00	0.08-0.12	Low	1.0-2.0	0.17	0.43	1	8	---
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.10	0.37			
	13-17	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	10-20	1.25-1.45	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.17	0.43	1	8	---
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			



TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
940 (con.): Rubble Land-----	0-60	---	1.70-2.35	>20.00	0.00-0.10	Low	0.0-0.1	---	---	---	8	---
960:												
Kolda-----	0-23	10-20	0.70-0.90	2.00-6.00	0.20-0.23	Low	10-15	0.49	0.49	5	8	---
	23-34	20-27	1.20-1.40	0.60-2.00	0.19-0.21	Moderate	3.0-6.0	0.55	0.55			
	34-58	40-50	1.30-1.50	0.06-0.20	0.19-0.21	High	0.0-1.0	0.28	0.28			
	58-65	40-50	1.60-1.80	0.06-0.20	0.14-0.16	High	0.0-0.5	0.28	0.28			
Umberland-----	0-10	35-40	1.25-1.40	0.20-0.60	0.17-0.21	High	0.5-1.0	0.43	0.43	5	4L	86
	10-60	35-50	1.30-1.45	0.00-0.06	0.15-0.21	High	0.5-1.0	0.32	0.32			
970:												
Rock Outcrop.												
Jobpeak-----	0-8	10-18	1.40-1.55	0.60-2.00	0.06-0.10	Low	0.8-2.0	0.15	0.55	1	7	38
	8-18	---	---	0.00-0.01	---	---	---	---	---			
Teguro-----	0-6	10-18	1.30-1.45	2.00-6.00	0.06-0.10	Low	1.0-3.0	0.20	0.43	1	7	38
	6-16	25-35	1.30-1.50	0.20-0.60	0.14-0.17	Moderate	0.5-2.0	0.20	0.37			
	16-20	---	---	0.00-0.01	---	---	---	---	---			
980:												
Madeline-----	0-4	20-27	1.20-1.35	0.60-2.00	0.10-0.12	Moderate	2.0-3.0	0.17	0.32	1	7	38
	4-12	25-40	1.25-1.45	0.20-0.60	0.14-0.16	Moderate	1.0-2.0	0.17	0.37			
	12-17	40-60	1.20-1.35	0.06-0.20	0.14-0.16	High	1.0-2.0	0.15	0.37			
	17-21	---	---	0.00-0.01	---	---	---	---	---			
Millerlux-----	0-6	18-27	1.10-1.25	0.60-2.00	0.11-0.13	Moderate	1.0-3.0	0.20	0.43	1	7	38
	6-14	40-60	1.25-1.45	0.00-0.06	0.14-0.16	High	0.5-1.0	0.20	0.24			
	14-19	35-50	1.25-1.40	0.06-0.20	0.14-0.16	High	0.5-1.0	0.24	0.37			
	19-23	---	---	0.00-0.01	---	---	---	---	---			
990:												
Millerlux-----	0-6	18-27	1.10-1.25	0.60-2.00	0.11-0.13	Moderate	1.0-3.0	0.20	0.43	1	7	38
	6-14	40-60	1.25-1.45	0.00-0.06	0.14-0.16	High	0.5-1.0	0.20	0.24			
	14-19	35-50	1.25-1.40	0.06-0.20	0.14-0.16	High	0.5-1.0	0.24	0.37			
	19-23	---	---	0.00-0.01	---	---	---	---	---			
Ninemile-----	0-7	15-25	1.35-1.50	0.60-2.00	0.08-0.11	Low	2.0-4.0	0.15	0.55	1	7	38
	7-15	40-60	1.25-1.45	0.00-0.06	0.14-0.16	High	1.0-3.0	0.28	0.37			
	15-19	---	---	0.00-0.01	---	---	---	---	---			
Madeline-----	0-4	20-27	1.20-1.35	0.60-2.00	0.10-0.12	Moderate	2.0-3.0	0.17	0.32	1	7	38
	4-12	25-40	1.25-1.45	0.20-0.60	0.14-0.16	Moderate	1.0-2.0	0.17	0.37			
	12-17	40-60	1.20-1.35	0.06-0.20	0.14-0.16	High	1.0-2.0	0.15	0.37			
	17-21	---	---	0.00-0.01	---	---	---	---	---			
1000:												
Stumble-----	0-4	3-10	1.40-1.60	6.00-20.00	0.06-0.08	Low	0.0-0.5	0.17	0.20	5	2	134
	4-20	3-10	1.40-1.60	6.00-20.00	0.06-0.08	Low	0.0-0.5	0.17	0.20			
	20-60	3-10	1.40-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.20			
1010:												
Downeyville-----	0-3	8-18	1.35-1.55	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.05	0.32	1	5	56
	3-9	18-27	1.25-1.45	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.10	0.43			
	9-13	---	---	0.00-0.01	---	---	---	---	---			
Stewval-----	0-3	12-18	1.35-1.50	2.00-6.00	0.07-0.09	Low	0.5-2.0	0.15	0.43	1	5	56
	3-8	24-30	1.30-1.45	0.60-2.00	0.04-0.09	Low	0.5-1.0	0.10	0.43			
	8-12	---	---	0.00-0.01	---	---	---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1010 (con.): Blacktop-----	0-5 5-9	10-18 ---	1.30-1.50 ---	0.60-2.00 0.00-0.02	0.04-0.08 ---	Low	0.0-0.5 ---	0.20 ---	0.24 ---	1	5	56
1011: Downeyville----	0-3 3-9 9-13	8-18 18-27 ---	1.35-1.55 1.25-1.45 ---	2.00-6.00 0.60-2.00 0.00-0.01	0.05-0.07 0.07-0.09 ---	Low Low	0.0-0.5 0.0-0.5 ---	0.05 0.10 ---	0.32 0.43 ---	1	5	56
Blacktop-----	0-5 5-9	10-18 ---	1.30-1.50 ---	0.60-2.00 0.00-0.02	0.04-0.08 ---	Low	0.0-0.5 ---	0.20 ---	0.24 ---	1	5	56
1012: Downeyville----	0-3 3-9 9-13	12-18 18-27 ---	1.35-1.55 1.25-1.45 ---	2.00-6.00 0.60-2.00 0.00-0.01	0.06-0.08 0.07-0.09 ---	Low Low	0.0-0.5 0.0-0.5 ---	0.05 0.10 ---	0.28 0.43 ---	1	5	56
Downeyville----	0-3 3-9 9-13	12-18 18-27 ---	1.35-1.55 1.25-1.45 ---	2.00-6.00 0.60-2.00 0.00-0.01	0.06-0.08 0.07-0.09 ---	Low Low	0.0-0.5 0.0-0.5 ---	0.05 0.10 ---	0.28 0.43 ---	1	5	56
Blacktop-----	0-5 5-9	10-18 ---	1.30-1.50 ---	0.60-2.00 0.00-0.02	0.04-0.08 ---	Low	0.0-0.5 ---	0.20 ---	0.24 ---	1	5	56
1013: Downeyville----	0-3 3-9 9-13	8-18 18-27 ---	1.35-1.55 1.25-1.45 ---	2.00-6.00 0.60-2.00 0.00-0.01	0.06-0.08 0.07-0.09 ---	Low Low	0.0-0.5 0.0-0.5 ---	0.05 0.10 ---	0.32 0.43 ---	1	5	56
Downeyville----	0-3 3-9 9-13	8-18 18-27 ---	1.35-1.55 1.25-1.45 ---	2.00-6.00 0.60-2.00 0.00-0.01	0.05-0.07 0.07-0.09 ---	Low Low	0.0-0.5 0.0-0.5 ---	0.05 0.10 ---	0.32 0.43 ---	1	5	56
Gabbvally-----	0-4 4-13 13-17	10-18 18-27 ---	1.35-1.50 1.30-1.50 ---	0.60-2.00 0.60-2.00 0.00-0.01	0.13-0.15 0.11-0.13 ---	Low Low	1.0-2.0 0.0-0.8 ---	0.15 0.15 ---	0.43 0.32 ---	1	7	38
1020: Unsel-----	0-5 5-12 12-35 35-60	12-18 20-27 10-25 2-8	1.35-1.55 1.25-1.45 1.35-1.55 1.50-1.70	2.00-6.00 0.20-0.60 0.60-2.00 6.00-20.00	0.07-0.09 0.10-0.17 0.07-0.12 0.03-0.05	Low Moderate Low Low	0.0-0.5 0.0-0.5 0.0-0.5 0.0-0.5	0.10 0.20 0.20 0.05	0.37 0.37 0.37 0.24	3	5	56
Annaw-----	0-4 4-12 12-60	5-12 5-12 0-6	1.45-1.60 1.45-1.60 1.50-1.65	2.00-6.00 2.00-6.00 6.00-20.00	0.08-0.11 0.05-0.08 0.03-0.06	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.15 0.15 0.10	0.28 0.32 0.24	2	4	86
Izo-----	0-4 4-60	0-5 0-5	1.50-1.70 1.40-1.60	>20.00 6.00-20.00	0.02-0.04 0.03-0.05	Low Low	0.0-0.5 0.0-0.5	0.05 0.02	0.20 0.10	5	3	86
1023: Unsel-----	0-5 5-12 12-35 35-60	15-20 20-27 10-25 2-8	1.25-1.45 1.25-1.45 1.35-1.55 1.50-1.70	0.60-2.00 0.20-0.60 0.60-2.00 6.00-20.00	0.14-0.16 0.10-0.17 0.07-0.12 0.03-0.05	Moderate Moderate Low Low	0.0-0.5 0.0-0.5 0.0-0.5 0.0-0.5	0.24 0.20 0.20 0.05	0.43 0.37 0.37 0.24	3	6	48
Pineval-----	0-5 5-17 17-60	10-20 25-35 5-10	1.35-1.55 1.15-1.30 1.40-1.60	0.60-2.00 0.20-0.60 0.60-2.00	0.12-0.15 0.10-0.12 0.04-0.06	Low Moderate Low	1.0-2.0 0.0-0.5 0.0-0.5	0.28 0.17 0.15	0.49 0.55 0.24	5	6	48

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1024:												
Unsel-----	0-5	12-18	1.35-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.10	0.37	3	5	56
	5-12	20-27	1.25-1.45	0.20-0.60	0.10-0.17	Moderate	0.0-0.5	0.20	0.37			
	12-35	10-25	1.35-1.55	0.60-2.00	0.07-0.12	Low	0.0-0.5	0.20	0.37			
	35-60	2-8	1.50-1.70	6.00-20.00	0.03-0.05	Low	0.0-0.5	0.05	0.24			
Desatoya-----	0-6	10-20	1.30-1.45	0.60-2.00	0.10-0.12	Low	1.0-3.0	0.10	0.43	5	7	38
	6-15	35-45	1.25-1.40	0.06-0.20	0.14-0.17	High	0.5-1.0	0.20	0.37			
	15-60	8-18	1.15-1.35	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.32			
Roic-----	0-1	10-15	1.30-1.50	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.10	0.32	1	6	48
	1-6	12-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.43	0.43			
	6-10	---	---	0.00-0.01	---		---	---	---			
1025:												
Unsel-----	0-5	15-20	1.25-1.45	0.60-2.00	0.14-0.16	Moderate	0.0-0.5	0.24	0.43	3	6	48
	5-12	20-27	1.25-1.45	0.20-0.60	0.10-0.17	Moderate	0.0-0.5	0.20	0.37			
	12-35	10-25	1.35-1.55	0.60-2.00	0.07-0.12	Low	0.0-0.5	0.20	0.37			
	35-60	2-8	1.50-1.70	6.00-20.00	0.03-0.05	Low	0.0-0.5	0.05	0.24			
Desatoya-----	0-6	10-20	1.30-1.45	0.60-2.00	0.10-0.12	Low	1.0-3.0	0.10	0.43	5	7	38
	6-15	35-45	1.25-1.40	0.06-0.20	0.14-0.17	High	0.5-1.0	0.20	0.37			
	15-60	8-18	1.15-1.35	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.32			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
1026:												
Unsel-----	0-5	12-18	1.35-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.10	0.37	3	5	56
	5-12	20-27	1.25-1.45	0.20-0.60	0.10-0.17	Moderate	0.0-0.5	0.20	0.37			
	12-35	10-25	1.35-1.55	0.60-2.00	0.07-0.12	Low	0.0-0.5	0.20	0.37			
	35-60	2-8	1.50-1.70	6.00-20.00	0.03-0.05	Low	0.0-0.5	0.05	0.24			
Pineval-----	0-5	10-20	1.35-1.55	0.60-2.00	0.12-0.15	Low	1.0-2.0	0.28	0.49	5	6	48
	5-17	25-35	1.15-1.30	0.20-0.60	0.10-0.12	Moderate	0.0-0.5	0.17	0.55			
	17-60	5-10	1.40-1.60	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.15	0.24			
Defler-----	0-7	8-18	1.40-1.60	2.00-6.00	0.07-0.10	Low	0.0-0.5	0.24	0.32	5	4	86
	7-44	8-18	1.15-1.35	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.15	0.43			
	44-60	5-10	1.20-1.40	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
1027:												
Unsel-----	0-5	12-18	1.35-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.10	0.37	3	5	56
	5-12	20-27	1.25-1.45	0.20-0.60	0.10-0.17	Moderate	0.0-0.5	0.20	0.37			
	12-35	10-25	1.35-1.55	0.60-2.00	0.07-0.12	Low	0.0-0.5	0.20	0.37			
	35-60	2-8	1.50-1.70	6.00-20.00	0.03-0.05	Low	0.0-0.5	0.05	0.24			
Roic-----	0-1	10-15	1.30-1.50	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.32	1	5	56
	1-6	12-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.43	0.43			
	6-10	---	---	0.00-0.01	---		---	---	---			
Annaw-----	0-4	3-6	1.50-1.65	6.00-20.00	0.05-0.10	Low	0.0-0.5	0.10	0.24	5	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.15	0.32			
	12-60	0-6	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
1030:												
Goldyke-----	0-1	10-15	1.45-1.60	2.00-6.00	0.08-0.11	Low	0.0-0.5	0.15	0.32	1	4	86
	1-4	12-18	1.45-1.60	2.00-6.00	0.08-0.11	Low	0.0-0.5	0.20	0.37			
	4-21	---	---	0.00-0.06	---		---	---	---			
	21-25	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1030 (con.): Blacktop-----	0-5	10-18	1.30-1.50	0.60-2.00	0.04-0.08	Low	0.0-0.5	0.20	0.24	1	5	56
	5-9	---	---	0.00-0.02	---		---	---	---			
Koyen-----	0-4	5-15	1.30-1.45	2.00-6.00	0.12-0.14	Low	0.5-0.7	0.32	0.32	4	3	86
	4-16	10-18	1.35-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.32	0.32			
	16-38	10-18	1.35-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.28	0.37			
	38-60	0-10	1.35-1.55	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.20			
1040: Terlco-----	0-5	10-15	1.40-1.55	0.60-2.00	0.10-0.14	Low	0.0-0.5	0.10	0.32	2	5	56
	5-13	18-35	1.35-1.55	0.06-0.20	0.12-0.16	Moderate	0.0-0.5	0.20	0.37			
	13-19	8-15	1.40-1.60	2.00-6.00	0.10-0.14	Low	0.0-0.5	0.10	0.37			
	19-60	3-10	1.45-1.65	6.00-20.00	0.05-0.09	Low	0.0-0.5	0.05	0.20			
Annaw-----	0-4	3-6	1.50-1.65	6.00-20.00	0.05-0.10	Low	0.0-0.5	0.10	0.24	5	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.15	0.32			
	12-60	0-6	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
Izo-----	0-4	0-5	1.50-1.70	>20.00	0.02-0.04	Low	0.0-0.5	0.05	0.20	5	3	86
	4-60	0-5	1.40-1.60	6.00-20.00	0.03-0.05	Low	0.0-0.5	0.02	0.10			
1050: Rock Outcrop.												
Ceejay-----	0-4	15-25	1.20-1.35	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.15	0.37	1	7	38
	4-16	35-45	1.15-1.30	0.06-0.20	0.13-0.15	High	0.0-0.5	0.15	0.28			
	16-20	---	---	0.00-0.01	---		---	---	---			
Olac-----	0-3	10-20	1.35-1.55	2.00-6.00	0.05-0.07	Low	0.8-2.0	0.10	0.24	1	5	56
	3-13	23-30	1.25-1.45	0.60-2.00	0.05-0.07	Low	0.5-1.0	0.05	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
1061: Olac-----	0-3	15-22	1.35-1.50	0.60-2.00	0.07-0.09	Low	1.0-2.0	0.10	0.55	1	7	38
	3-13	23-30	1.25-1.45	0.60-2.00	0.05-0.07	Low	0.5-1.0	0.05	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
Theon-----	0-3	12-20	1.40-1.55	0.60-6.00	0.04-0.09	Low	0.0-0.5	0.15	0.37	1	7	38
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	---	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
Pirouette-----	0-4	10-18	1.40-1.55	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.24	0.64	1	5	56
	4-11	28-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	0.0-0.5	0.24	0.43			
	11-12	---	---	0.00-0.01	---		---	---	---			
	12-16	---	---	0.00-0.01	---		---	---	---			
1062: Olac-----	0-3	15-22	1.35-1.50	0.60-2.00	0.07-0.09	Low	1.0-2.0	0.10	0.43	1	8	---
	3-13	23-30	1.25-1.45	0.60-2.00	0.05-0.07	Low	0.5-1.0	0.05	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
Old Camp-----	0-3	5-15	1.35-1.50	2.00-6.00	0.07-0.09	Low	1.0-2.0	0.17	0.32	1	5	56
	3-13	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
Ceejay-----	0-4	15-25	1.20-1.35	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.15	0.37	1	7	38
	4-16	35-45	1.15-1.30	0.06-0.20	0.13-0.15	High	0.0-0.5	0.15	0.28			
	16-20	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1071:												
Ganaflan-----	0-5	10-18	1.35-1.50	0.60-2.00	0.10-0.15	Low	0.0-0.5	0.28	0.49	3	5	56
	5-21	10-18	1.35-1.50	0.60-2.00	0.10-0.17	Low	0.0-0.5	0.37	0.43			
	21-32	---	---	0.00-0.01	---		---	---	---			
	32-60	2-10	1.40-1.60	>20.00	0.03-0.06	Low	0.0-0.5	0.10	0.20			
Bluewing-----	0-5	6-10	1.40-1.60	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.32	5	5	56
	5-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43	5	5	56
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
1090:												
Umerland-----	0-10	35-40	1.25-1.40	0.20-0.60	0.17-0.21	High	0.5-1.0	0.43	0.43	5	4L	86
	10-60	35-50	1.30-1.45	0.00-0.06	0.15-0.21	High	0.5-1.0	0.32	0.32			
Isolde-----	0-6	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.28	0.28	5	1	250
	6-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.24	0.24			
1100:												
Theon-----	0-3	12-18	1.40-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.17	0.32	1	4	86
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
Olac-----	0-3	10-20	1.35-1.55	2.00-6.00	0.05-0.07	Low	0.8-2.0	0.10	0.24	1	5	56
	3-13	23-30	1.25-1.45	0.60-2.00	0.05-0.07	Low	0.5-1.0	0.05	0.43			
	13-17	---	---	0.00-0.01	---		---	---	---			
1101:												
Theon-----	0-3	12-20	1.40-1.55	0.60-2.00	0.04-0.09	Low	0.0-0.5	0.10	0.37	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
Theon-----	0-3	12-20	1.40-1.55	0.60-6.00	0.04-0.09	Low	0.0-0.5	0.15	0.37	1	7	38
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	---	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
1102:												
Theon-----	0-3	12-18	1.40-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.17	0.32	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
Theon-----	0-3	10-20	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.05	0.32	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.15	0.55			
	12-16	---	---	0.00-0.01	---		---	---	---			
1104:												
Theon-----	0-3	12-18	1.40-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.17	0.32	1	5	56
	3-12	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.10	0.37			
	12-16	---	---	0.00-0.01	---		---	---	---			
Roic-----	0-1	10-15	1.30-1.50	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.32	1	5	56
	1-6	12-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.43	0.43			
	6-10	---	---	0.00-0.01	---		---	---	---			
Singatse-----	0-4	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.28	1	5	56
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1120: Patna-----	0-7	3-10	1.40-1.55	6.00-20.00	0.07-0.09	Low	0.0-0.5	0.15	0.15	3	1	220
	7-35	10-18	1.35-1.50	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.24	0.24			
	35-50	0-5	1.40-1.60	6.00-20.00	0.07-0.09	Low	0.0-0.5	0.15	0.15			
	50-60	0-5	1.45-1.65	6.00-20.00	0.07-0.10	Low	0.0-0.5	0.15	0.15			
Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
Juva-----	0-6	5-15	1.35-1.50	2.00-6.00	0.09-0.11	Low	0.5-1.0	0.24	0.43	5	4	86
	6-60	5-15	1.40-1.55	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.20	0.24			
1121: Patna-----	0-7	3-10	1.40-1.55	6.00-20.00	0.07-0.09	Low	0.0-0.5	0.15	0.15	3	1	220
	7-35	10-18	1.35-1.50	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.24	0.24			
	35-50	0-5	1.40-1.60	6.00-20.00	0.07-0.09	Low	0.0-0.5	0.15	0.15			
	50-60	0-5	1.45-1.65	6.00-20.00	0.07-0.10	Low	0.0-0.5	0.15	0.15			
1130: Malpais-----	0-3	5-15	1.35-1.55	2.00-6.00	0.04-0.07	Low	0.0-0.5	0.15	0.28	5	4	86
	3-15	10-18	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.10	0.43			
	15-60	10-18	1.40-1.60	2.00-6.00	0.07-0.10	Low	0.0-0.5	0.10	0.37			
Malpais-----	0-3	5-15	1.35-1.55	2.00-6.00	0.05-0.08	Low	0.0-0.5	0.20	0.37	5	4	86
	3-15	10-18	1.40-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.10	0.32			
	15-60	10-18	1.40-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.10	0.32			
1140: Roic-----	0-1	8-12	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.15	0.28	1	4	86
	1-6	12-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.43	0.43			
	6-10	---	---	0.00-0.01	---		---	---	---			
Biddleman-----	0-3	8-15	1.40-1.55	2.00-6.00	0.08-0.11	Low	0.0-0.5	0.32	0.37	5	4	86
	3-10	20-30	1.35-1.50	0.20-0.60	0.12-0.14	Moderate	0.0-0.5	0.20	0.37			
	10-60	2-10	1.40-1.60	>20.00	0.03-0.05	Low	0.0-0.5	0.10	0.15			
Hooten-----	0-1	0-5	1.50-1.65	6.00-20.00	0.03-0.05	Low	0.0-0.5	0.10	0.20	2	3	86
	1-6	25-35	1.25-1.40	0.20-0.60	0.09-0.11	Low	0.0-0.5	0.10	0.28			
	6-12	---	---	0.00-0.20	---		---	---	---			
	12-19	0-5	1.50-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.17	0.20			
	19-60	5-15	1.40-1.60	0.60-2.00	0.16-0.18	Low	0.0-0.5	0.49	0.49			
1142: Roic-----	0-1	8-12	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.15	0.28	1	4	86
	1-6	12-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.43	0.43			
	6-10	---	---	0.00-0.01	---		---	---	---			
Mazuma-----	0-9	8-12	1.40-1.55	2.00-6.00	0.12-0.14	Low	0.0-0.5	0.28	0.32	5	3	86
	9-60	5-15	1.45-1.65	2.00-6.00	0.10-0.14	Low	0.0-0.5	0.24	0.55			
Celeton-----	0-2	8-15	0.85-1.10	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.32	1	4	86
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---		---	---	---			
1143: Roic-----	0-1	8-12	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.15	0.28	1	4	86
	1-6	12-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.43	0.43			
	6-10	---	---	0.00-0.01	---		---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1143 (con.): Troocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.37	5	4	86
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
Celeton-----	0-2	8-15	0.85-1.10	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.32	1	4	86
	2-7	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	7-14	---	---	0.00-0.01	---		---	---	---			
1144: Roic-----	0-1	8-12	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.15	0.28	1	4	86
	1-6	12-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.43	0.43			
	6-10	---	---	0.00-0.01	---		---	---	---			
Singatse-----	0-4	5-15	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.4-0.6	0.10	0.32	1	5	56
	4-10	5-15	1.40-1.60	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.10	0.37			
	10-14	---	---	0.00-0.01	---		---	---	---			
Celeton-----	0-3	8-15	0.85-1.10	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.32	1	4	86
	3-11	5-15	0.90-1.10	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.24	0.32			
	11-15	---	---	0.00-0.01	---		---	---	---			
1145: Roic-----	0-1	10-15	1.30-1.50	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.32	1	5	56
	1-6	12-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.43	0.43			
	6-10	---	---	0.00-0.01	---		---	---	---			
Patna-----	0-7	3-10	1.40-1.55	6.00-20.00	0.07-0.09	Low	0.0-0.5	0.15	0.15	3	1	220
	7-35	10-18	1.35-1.50	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.24	0.24			
	35-50	0-5	1.40-1.60	6.00-20.00	0.07-0.09	Low	0.0-0.5	0.15	0.15			
	50-60	0-5	1.45-1.65	6.00-20.00	0.07-0.10	Low	0.0-0.5	0.15	0.15			
1150: Phing-----	0-5	10-20	1.35-1.50	0.60-2.00	0.11-0.13	Low	1.0-2.0	0.15	0.32	3	4	86
	5-35	45-60	1.25-1.40	0.06-0.20	0.12-0.16	High	0.0-0.5	0.20	0.20			
	35-60	25-45	1.45-1.65	0.06-0.20	0.15-0.19	Moderate	0.0-0.5	0.32	0.43			
Buffaran-----	0-7	20-27	1.10-1.25	0.20-0.60	0.10-0.13	Moderate	2.0-4.0	0.28	0.49	1	7	38
	7-15	35-50	1.15-1.30	0.06-0.20	0.12-0.15	High	0.0-1.0	0.24	0.32			
	15-60	---	---	0.00-0.01	---		---	---	---			
1160: Sojur-----	0-7	18-25	1.25-1.45	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.05	0.43	1	8	---
	7-11	---	---	0.00-0.01	---		---	---	---			
Singatse-----	0-4	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.28	1	5	56
	4-10	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	10-14	---	---	0.00-0.01	---		---	---	---			
1171: Tocan-----	0-4	8-15	1.35-1.55	2.00-6.00	0.09-0.12	Low	0.5-0.8	0.37	0.43	5	3	86
	4-16	20-28	1.30-1.50	0.20-0.60	0.16-0.19	Moderate	0.0-0.5	0.17	0.20			
	16-60	6-10	1.50-1.70	2.00-6.00	0.07-0.10	Low	0.0-0.5	0.15	0.28			
Aboten-----	0-5	8-18	1.45-1.60	2.00-6.00	0.04-0.06	Low	0.5-1.0	0.05	0.32	2	5	56
	5-13	25-35	1.30-1.50	0.06-0.20	0.15-0.19	Moderate	0.0-0.5	0.28	0.37			
	13-21	---	---	0.00-0.20	---		---	---	---			
	21-60	3-8	1.50-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1180: Jerval-----	0-4	5-10	1.40-1.55	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.17	0.49	5	4	86
	4-18	27-35	1.20-1.40	0.20-0.60	0.14-0.16	Moderate	0.0-0.5	0.24	0.43			
	18-60	5-12	1.35-1.50	2.00-6.00	0.06-0.07	Low	0.0-0.5	0.15	0.32			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43	5	5	56
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
1200: Arclay-----	0-4	5-12	1.25-1.40	2.00-6.00	0.04-0.07	Low	1.0-2.0	0.10	0.20	2	5	56
	4-16	25-35	1.30-1.50	0.20-0.60	0.11-0.13	Moderate	1.0-2.0	0.24	0.43			
	16-40	---	---	0.00-20.00	---	---	---	---	---			
	40-44	---	---	0.00-0.01	---	---	---	---	---			
1210: Biga-----	0-3	4-12	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.24	2	4	86
	3-13	35-45	1.30-1.45	0.06-0.20	0.15-0.19	High	0.0-0.5	0.37	0.37			
	13-60	2-10	1.55-1.75	0.06-0.20	0.05-0.07	Low	0.0-0.5	0.24	0.24			
Granshaw-----	0-3	4-10	1.40-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.17	0.28	3	4	86
	3-24	10-17	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.24	0.28			
	24-60	2-8	1.50-1.70	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.15	0.17			
Labkey-----	0-4	5-12	1.45-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.37	2	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.37			
	12-60	2-8	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
1211: Biga-----	0-3	4-12	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.24	2	4	86
	3-13	35-45	1.30-1.45	0.06-0.20	0.15-0.19	High	0.0-0.5	0.37	0.37			
	13-60	2-10	1.55-1.75	0.06-0.20	0.05-0.07	Low	0.0-0.5	0.24	0.24			
1212: Biga-----	0-3	4-12	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.24	2	4	86
	3-13	35-45	1.30-1.45	0.06-0.20	0.15-0.19	High	0.0-0.5	0.37	0.37			
	13-60	2-10	1.55-1.75	0.06-0.20	0.05-0.07	Low	0.0-0.5	0.24	0.24			
Roic-----	0-1	10-15	1.30-1.50	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.32	1	5	56
	1-6	12-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.43	0.43			
	6-10	---	---	0.00-0.01	---	---	---	---	---			
Labkey-----	0-4	5-12	1.45-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.37	2	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.37			
	12-60	2-8	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
1220: Labkey-----	0-4	5-12	1.45-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.37	2	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.37			
	12-60	2-8	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
1230: Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.07-0.08	Low	0.0-0.5	0.17	0.64	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.32			
Bluewing-----	0-5	6-10	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.24	0.32	5	4	86
	5-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			



TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1230 (con.): Dorper-----	0-2	8-15	1.35-1.55	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.32	2	5	56
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
1231: Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.07-0.08	Low	0.0-0.5	0.17	0.64	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.32			
Trocken-----	0-3	5-18	1.40-1.55	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.64	5	5	56
	3-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			
Bluewing-----	0-7	3-10	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24	5	4	86
	7-60	3-10	1.55-1.75	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
1232: Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.06-0.09	Low	0.0-0.5	0.15	0.28	5	4	86
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.28			
Rednik-----	0-5	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	5-16	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	16-21	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	21-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
Trocken-----	0-3	8-18	1.40-1.55	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43	5	5	56
	3-60	8-18	1.50-1.70	0.60-2.00	0.04-0.06	Low	0.0-0.5	0.10	0.43			
1233: Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.08-0.11	Low	0.0-0.5	0.24	0.32	5	4	86
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.28			
Buckaroo-----	0-4	8-15	1.40-1.55	0.60-2.00	0.08-0.11	Low	0.0-0.5	0.15	0.49	2	5	56
	4-16	35-50	1.30-1.45	0.06-0.20	0.15-0.18	High	0.0-0.5	0.32	0.37			
	16-60	8-18	1.40-1.55	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.37			
Bluewing-----	0-7	3-10	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24	5	4	86
	7-60	3-10	1.55-1.75	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.28			
1280: Soar-----	0-2	12-20	1.30-1.50	2.00-6.00	0.05-0.07	Low	0.5-1.0	0.05	0.15	2	5	56
	2-10	20-26	1.40-1.60	0.20-0.60	0.06-0.08	Low	0.0-0.5	0.15	0.55			
	10-24	---	---	0.00-20.00	---	---	---	---	---			
	24-28	---	---	0.00-0.01	---	---	---	---	---			
Arclay-----	0-4	5-12	1.25-1.40	2.00-6.00	0.04-0.07	Low	1.0-2.0	0.10	0.20	2	5	56
	4-16	25-35	1.30-1.50	0.20-0.60	0.11-0.13	Moderate	1.0-2.0	0.24	0.43			
	16-40	---	---	0.00-20.00	---	---	---	---	---			
	40-44	---	---	0.00-0.01	---	---	---	---	---			
Soar-----	0-2	12-20	1.30-1.50	2.00-6.00	0.05-0.07	Low	0.5-1.0	0.05	0.15	2	5	56
	2-10	20-26	1.40-1.60	0.20-0.60	0.06-0.08	Low	0.0-0.5	0.15	0.55			
	10-24	---	---	0.00-20.00	---	---	---	---	---			
	24-28	---	---	0.00-0.01	---	---	---	---	---			

TABLE 13.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1290: Slocave-----	0-1	6-14	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.20	1	5	56
	1-5	6-16	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.28			
	5-22	---	---	0.00-20.00	---		---	---	---			
	22-26	---	---	0.00-0.01	---		---	---	---			
Vium-----	0-2	6-12	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.17	0.20	1	4	86
	2-8	10-18	1.40-1.60	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.10	0.28			
	8-12	---	---	0.00-0.01	---		---	---	---			
1300: Lovelock-----	0-10	15-27	0.85-1.00	0.60-2.00	0.20-0.22	Moderate	10-20	0.32	0.32	5	4L	86
	10-60	35-60	0.85-1.00	0.60-2.00	0.19-0.21	High	1.0-10	0.24	0.24			
1301: Lovelock-----	0-10	15-27	0.85-1.00	0.60-2.00	0.20-0.22	Moderate	10-20	0.32	0.32	5	4L	86
	10-60	35-60	0.85-1.00	0.60-2.00	0.19-0.21	High	1.0-10	0.24	0.24			
1320: Gardella-----	0-2	5-15	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.0-0.5	0.28	0.49	2	5	56
	2-9	3-8	1.40-1.60	6.00-20.00	0.07-0.08	Low	0.0-0.5	0.10	0.17			
	9-23	---	---	0.00-0.20	---		---	---	---			
	23-60	40-50	1.60-1.80	0.00-0.06	0.13-0.15	High	0.0-0.5	0.17	0.17			
1330: Parran-----	0-8	40-55	1.20-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.37	0.37	5	4	86
	8-22	35-55	1.25-1.45	0.00-0.06	0.14-0.16	High	0.0-0.5	0.37	0.37			
	22-60	35-55	1.25-1.45	0.00-0.06	0.14-0.16	High	0.0-0.2	0.37	0.37			
1331: Parran-----	0-8	40-55	1.20-1.35	0.00-0.06	0.14-0.16	High	0.0-0.5	0.37	0.37	5	4	86
	8-22	35-55	1.25-1.45	0.00-0.06	0.14-0.16	High	0.0-0.5	0.37	0.37			
	22-60	35-55	1.25-1.45	0.00-0.06	0.14-0.16	High	0.0-0.2	0.37	0.37			
Hawsley-----	0-10	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	10-22	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
	22-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
1332: Parran-----	0-8	27-40	1.25-1.45	0.00-0.06	0.16-0.18	Moderate	0.0-0.5	0.37	0.37	5	4L	86
	8-22	35-55	1.25-1.45	0.00-0.06	0.14-0.16	High	0.0-0.5	0.37	0.37			
	22-60	35-55	1.25-1.45	0.00-0.06	0.14-0.16	High	0.0-0.2	0.37	0.37			
Umberland-----	0-10	35-40	1.25-1.40	0.20-0.60	0.17-0.21	High	0.5-1.0	0.43	0.43	5	4L	86
	10-60	35-50	1.30-1.45	0.00-0.06	0.15-0.21	High	0.5-1.0	0.32	0.32			
1340: Inmo-----	0-8	3-8	1.45-1.65	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.17	5	4	86
	8-40	2-8	1.50-1.65	>20.00	0.02-0.04	Low	0.0-0.5	0.05	0.24			
	40-60	5-10	1.55-1.70	>20.00	0.04-0.07	Low	0.0-0.5	0.05	0.15			
Inmo-----	0-8	3-8	1.45-1.65	>20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24	5	4	86
	8-40	1-6	1.50-1.65	>20.00	0.02-0.04	Low	0.0-0.5	0.05	0.24			
	40-60	2-8	1.55-1.70	>20.00	0.04-0.07	Low	0.0-0.5	0.05	0.15			

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
100: Rock Outcrop.								
Budihol-----	0-3	12-18	5.0-15.0	6.6-7.3	---	---	---	---
	3-7	12-18	5.0-15.0	6.6-7.3	---	---	---	---
	7-21	---	---	---	---	---	---	---
	21-25	---	---	---	---	---	---	---
Chill-----	0-4	5-10	5.0-11.0	6.6-7.8	---	---	---	---
	4-8	25-35	19.0-27.0	6.6-7.8	---	---	---	---
	8-22	---	---	---	---	---	---	---
102: Rock Outcrop.								
Budihol-----	0-3	12-18	5.0-15.0	6.6-7.3	---	---	---	---
	3-7	12-18	5.0-15.0	6.6-7.3	---	---	---	---
	7-21	---	---	---	---	---	---	---
	21-25	---	---	---	---	---	---	---
Minneha-----	0-12	10-20	10.0-25.0	6.1-7.8	---	---	---	---
	12-16	6-15	5.0-15.0	6.1-7.8	---	---	---	---
	16-20	---	---	---	---	---	---	---
110: Bimmer-----	0-5	10-18	6.0-12.0	6.6-7.8	1-2	---	---	---
	5-21	---	---	---	---	---	---	---
	21-31	---	---	---	---	---	---	---
Chill-----	0-4	5-10	5.0-11.0	6.6-7.8	---	---	---	---
	4-8	25-35	19.0-27.0	6.6-7.8	---	---	---	---
	8-22	---	---	---	---	---	---	---
120: Rock Outcrop.								
Nemico-----	0-3	5-10	3.0-7.0	6.6-9.0	0-1	---	0-2	1-12
	3-12	35-45	21.0-33.0	7.9-9.0	0-5	---	4-8	31-60
	12-15	10-15	6.0-10.0	7.9-9.0	1-5	---	8-16	31-45
	15-16	---	---	---	---	---	---	---
	16-20	---	---	---	---	---	---	---
Mirkwood-----	0-2	10-18	7.0-14.0	6.6-7.8	---	---	---	0-5
	2-11	25-35	18.0-26.0	6.6-7.8	0-1	---	---	0-5
	11-21	---	---	---	---	---	---	---
130: Bedzee-----	0-7	20-27	14.0-20.0	7.9-8.4	---	---	2-4	1-12
	7-17	40-60	24.0-37.0	7.9-9.0	10-20	---	4-8	1-12
	17-21	---	---	---	---	---	---	---
Loomer-----	0-7	15-25	10.0-25.0	6.6-7.8	---	---	---	---
	7-17	35-50	20.0-40.0	6.6-7.8	---	---	---	---
	17-21	---	---	---	---	---	---	---
Bedwyr-----	0-2	18-27	12.0-18.0	7.4-9.0	---	---	0-4	5-12
	2-10	45-55	27.0-34.0	8.5-9.0	1-5	---	2-8	13-30
	10-13	45-60	27.0-37.0	7.9-9.0	1-5	0-1	8-16	5-30
	13-23	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
140: Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
141: Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
Isolde-----	0-6	0-5	1.0-5.0	6.6-8.4	0-1	---	---	0-5
	6-60	0-5	1.0-5.0	6.6-8.4	0-3	0-1	0-2	0-5
142: Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
Appian-----	0-6	2-5	1.0-5.0	7.9-9.0	1-5	---	0-4	5-12
	6-12	27-35	16.0-22.0	8.5-9.6	5-10	1-2	0-8	31-90
	12-16	2-5	1.0-5.0	7.4-9.6	---	---	0-2	0-5
	16-60	0-5	0.0-5.0	7.4-9.6	---	---	0-2	0-5
Ruhe-----	0-4	0-5	1.0-5.0	7.9-9.0	1-5	---	2-4	0-5
	4-18	0-5	1.0-5.0	7.9-9.0	5-15	---	2-4	0-5
	18-28	---	---	---	---	---	---	---
	28-60	0-5	1.0-5.0	7.9-9.6	5-10	0-1	4-8	1-5
143: Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
Gamgee-----	0-3	6-10	5.0-9.0	7.9-9.0	0-1	---	0-2	13-30
	3-24	25-35	18.0-26.0	7.9-9.0	0-1	---	4-8	10-45
	24-55	10-20	7.0-15.0	7.9-9.0	1-5	---	4-8	13-45
	55-60	27-35	19.0-26.0	7.9-9.0	1-5	---	4-8	13-45
144: Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
Theon-----	0-3	10-20	6.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	1-12
	12-16	---	---	---	---	---	---	---
Pirouette-----	0-4	10-18	7.0-14.0	7.9-9.0	0-1	---	0-2	13-30
	4-11	28-35	20.0-26.0	7.9-9.0	0-1	---	2-8	13-45
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
146: Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
Juva-----	0-6	10-20	7.0-16.0	7.9-9.0	0-5	---	0-2	1-12
	6-60	5-15	4.0-11.0	7.9-9.0	1-10	---	0-4	13-30

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
<b>147:</b>								
Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
Celeton-----	0-2	8-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---
Bluewing-----	0-5	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	5-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
<b>150:</b>								
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.6	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.6	1-10	---	8-16	31-90
	16-60	8-18	5.0-12.0	8.5-9.6	5-15	---	8-16	31-90
Bluewing-----	0-7	3-8	1.0-7.0	6.6-9.0	0-5	---	0-2	0-5
	7-60	3-8	1.0-7.0	6.6-9.0	5-10	---	0-4	0-5
<b>152:</b>								
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.6	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.6	1-10	---	8-16	31-90
	16-60	8-18	5.0-12.0	8.5-9.6	5-15	---	8-16	31-90
Watoopah-----	0-2	1-5	0.0-5.0	6.6-7.8	---	---	---	---
	2-16	10-18	5.0-15.0	6.6-7.8	---	---	0-2	1-5
	16-29	0-5	0.0-5.0	7.4-8.4	0-10	---	0-2	1-5
	29-60	0-5	0.0-5.0	7.9-9.0	5-15	---	0-4	1-12
Rezave-----	0-3	12-18	10.0-15.0	6.6-8.4	0-2	---	0-2	0-2
	3-9	35-55	30.0-45.0	7.9-9.0	1-5	---	2-4	13-30
	9-15	35-45	30.0-40.0	8.5-9.6	5-15	---	2-8	13-30
	15-19	---	---	---	---	---	---	---
<b>153:</b>								
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.6	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.6	1-10	---	8-16	31-90
	16-60	8-18	5.0-12.0	8.5-9.6	5-15	---	8-16	31-90
Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
Bluewing-----	0-7	3-10	2.0-8.0	7.4-9.0	0-2	---	0-2	0-5
	7-60	3-10	2.0-8.0	7.4-9.0	1-5	---	0-4	1-12
<b>154:</b>								
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.6	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.6	1-10	---	8-16	31-90
	16-60	8-18	5.0-12.0	8.5-9.6	5-15	---	8-16	31-90
Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.0	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	8.5-9.6	5-10	---	8-32	31-45

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
155:								
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.6	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.6	1-10	---	8-16	31-90
	16-60	8-18	5.0-12.0	8.5-9.6	5-15	---	8-16	31-90
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.6	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	7.9-9.6	5-10	---	8-16	31-45
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
158:								
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.6	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.6	1-10	---	8-16	31-90
	16-60	8-18	5.0-12.0	8.5-9.6	5-15	---	8-16	31-90
Celeton-----	0-2	8-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---
Wholan-----	0-6	5-15	3.0-10.0	7.4-8.4	---	---	0-4	0-12
	6-45	5-15	3.0-10.0	7.4-9.6	5-15	---	4-16	5-12
	45-60	2-10	1.0-7.0	7.4-9.6	5-15	---	8-16	0-12
159:								
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.0	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.0	1-10	---	8-16	30-130
	16-60	8-18	5.0-12.0	8.5-9.0	5-15	---	8-32	31-90
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.6	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	7.9-9.6	5-10	---	8-16	31-45
160:								
Rock Outcrop.								
Singatse-----	0-4	7-15	5.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
161:								
Rock Outcrop.								
Singatse-----	0-4	7-15	5.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
Uripnes-----	0-4	10-18	6.0-12.0	6.1-7.8	0-1	---	---	---
	4-21	---	---	---	---	---	---	---
	21-25	---	---	---	---	---	---	---
162:								
Singatse-----	0-4	7-15	5.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
Theon-----	0-3	10-20	6.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	1-12
	12-16	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
162 (con.): Rezave-----	0-3	12-18	10.0-15.0	6.6-8.4	0-2	---	0-2	1-12
	3-9	35-55	30.0-45.0	7.9-9.0	1-5	---	2-4	13-30
	9-15	35-45	30.0-40.0	8.5-9.6	5-15	---	2-8	13-30
	15-19	---	---	---	---	---	---	---
164: Singatse-----	0-4	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
Loomer-----	0-7	15-25	10.0-25.0	6.6-7.8	---	---	---	---
	7-17	35-50	20.0-40.0	6.6-7.8	---	---	---	---
	17-21	---	---	---	---	---	---	---
170: Isolde-----	0-6	0-5	1.0-5.0	6.6-8.4	0-1	---	---	0-5
	6-60	0-5	1.0-5.0	6.6-8.4	0-3	0-1	0-2	0-5
Dune Land-----	0-6	0-1	0.0-1.0	7.4-8.4	---	---	---	---
	6-60	0-1	0.0-1.0	7.4-8.4	---	---	---	---
Pirouette-----	0-4	5-10	4.0-8.0	7.9-9.0	0-1	---	0-2	13-30
	4-11	28-35	20.0-26.0	7.9-9.0	0-1	---	2-8	13-45
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
171: Isolde-----	0-6	0-5	0.0-5.0	6.6-8.4	---	---	4-8	0-12
	6-60	0-5	0.0-5.0	6.6-8.4	0-10	---	0-4	0-12
Parran-----	0-8	40-55	28.0-40.0	8.5-9.6	0-5	0-1	32-99	46-150
	8-22	35-55	25.0-40.0	8.5-9.6	0-5	1-3	32-99	46-150
	22-60	35-55	25.0-39.0	8.5-9.6	0-5	0-3	16-99	13-45
Appian-----	0-4	0-5	0.0-5.0	7.9-9.0	10-20	---	0-2	0-12
	4-12	27-35	16.0-22.0	8.5-9.6	15-25	---	4-16	31-90
	12-46	0-5	0.0-5.0	7.4-9.6	5-15	---	0-8	0-12
	46-60	40-60	24.0-37.0	7.4-9.6	5-15	---	4-8	5-12
172: Isolde-----	0-6	0-5	1.0-5.0	6.6-8.4	0-1	---	---	0-5
	6-60	0-5	1.0-5.0	6.6-8.4	0-3	0-1	0-2	0-5
Pirouette-----	0-4	5-10	4.0-8.0	7.9-9.0	0-1	---	0-2	13-30
	4-11	28-35	20.0-26.0	7.9-9.0	0-1	---	2-8	13-45
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
173: Isolde-----	0-6	0-5	0.0-5.0	6.6-8.4	---	---	4-8	0-12
	6-60	0-5	0.0-5.0	6.6-8.4	0-10	---	0-4	0-12
174: Isolde-----	0-6	0-5	0.0-5.0	6.6-8.4	---	---	4-8	0-12
	6-60	0-5	0.0-5.0	6.6-8.4	0-10	---	0-4	0-12

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
174 (con.): Ragtown-----	0-6	12-24	10.0-25.0	7.9-9.6	1-10	1-10	16-32	1-5
	6-23	28-35	20.0-30.0	7.9-9.6	1-10	1-10	16-32	1-12
	23-60	35-45	20.0-35.0	7.9-9.6	1-10	1-10	4-16	1-12
180: Bluewing-----	0-7	3-8	1.0-7.0	6.6-9.0	0-5	---	0-2	0-5
	7-60	3-8	1.0-7.0	6.6-9.0	5-10	---	0-4	0-5
Inmo-----	0-8	8-15	5.0-10.0	7.9-9.0	1-5	---	0-2	1-12
	8-40	2-8	0.0-5.0	7.9-9.0	1-5	---	2-4	1-12
	40-60	5-10	0.0-8.0	7.9-9.6	1-5	---	2-4	1-12
181: Bluewing-----	0-7	3-10	2.0-8.0	7.4-9.0	0-2	---	0-2	0-5
	7-60	3-10	2.0-8.0	7.4-9.0	1-5	---	0-4	1-12
184: Bluewing-----	0-7	3-10	2.0-8.0	7.4-9.0	0-2	---	0-2	0-5
	7-60	3-10	2.0-8.0	7.4-9.0	1-5	---	0-4	1-12
Bluewing-----	0-7	3-8	1.0-7.0	6.6-9.0	0-5	---	0-2	0-5
	7-60	3-8	1.0-7.0	6.6-9.0	5-10	---	0-4	0-5
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-23.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
185: Rock Outcrop.								
Bluewing-----	0-7	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	7-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
Toulon-----	0-2	10-12	5.0-10.0	7.9-9.0	0-5	0-2	2-4	0-12
	2-16	12-15	5.0-10.0	7.9-9.0	1-5	0-2	2-4	0-12
	16-60	0-3	0.0-3.0	7.9-9.0	1-5	0-2	2-4	0-12
186: Bluewing-----	0-5	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	5-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
190: Theon-----	0-3	10-20	6.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	1-12
	12-16	---	---	---	---	---	---	---
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
191: Rock Outcrop.								
Theon-----	0-3	12-18	7.0-12.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	0-12
	12-16	---	---	---	---	---	---	---



TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
191 (con.): Singatse-----	0-4	7-15	5.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
192: Theon-----	0-3	10-20	6.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	1-12
	12-16	---	---	---	---	---	---	---
193: Rock Outcrop.								
Theon-----	0-3	12-18	7.0-12.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	0-12
	12-16	---	---	---	---	---	---	---
Mirkwood-----	0-2	10-18	7.0-14.0	6.6-7.8	---	---	---	0-5
	2-11	25-35	18.0-26.0	6.6-7.8	0-1	---	---	0-5
	11-21	---	---	---	---	---	---	---
194: Theon-----	0-3	12-20	7.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	0-12
	12-16	---	---	---	---	---	---	---
Hooplite-----	0-4	12-20	8.0-16.0	7.4-8.4	0-1	---	0-4	---
	4-8	22-30	14.0-20.0	7.4-8.4	1-2	---	0-4	---
	8-18	---	---	---	---	---	---	---
Singatse-----	0-4	5-15	3.0-10.0	7.9-9.0	1-10	---	0-2	0-2
	4-10	5-15	3.0-10.0	7.9-9.0	1-10	---	0-2	0-2
	10-14	---	---	---	---	---	---	---
199: Theon-----	0-3	12-20	7.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	0-12
	12-16	---	---	---	---	---	---	---
Olac-----	0-3	15-22	11.0-17.0	6.1-7.8	---	---	---	---
	3-13	23-30	15.0-20.0	6.1-7.8	---	---	---	---
	13-17	---	---	---	---	---	---	---
Singatse-----	0-4	10-15	5.0-10.0	7.9-9.0	1-10	---	0-2	0-2
	4-10	5-15	3.0-10.0	7.9-9.0	1-10	---	0-2	0-2
	10-14	---	---	---	---	---	---	---
200: Rock Outcrop.								
Pirouette-----	0-4	10-18	10.0-15.0	7.9-9.0	1-5	---	0-2	1-12
	4-11	28-35	20.0-30.0	7.9-9.0	0-5	0-1	2-8	13-30
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
Osobb-----	0-3	12-18	10.0-15.0	7.4-9.0	1-5	---	0-2	1-5
	3-17	12-18	10.0-15.0	7.9-9.6	5-10	---	2-4	1-5
	17-18	---	---	---	---	---	---	---
	18-22	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
201:								
Pirouette-----	0-4	10-18	10.0-15.0	7.9-9.0	1-5	---	0-2	1-12
	4-11	28-35	20.0-30.0	7.9-9.0	0-5	0-1	2-8	13-30
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
Osobb-----	0-3	12-18	10.0-15.0	7.4-9.0	1-5	---	0-2	1-5
	3-17	12-18	10.0-15.0	7.9-9.6	5-10	---	2-4	1-5
	17-18	---	---	---	---	---	---	---
	18-22	---	---	---	---	---	---	---
Celeton-----	0-2	5-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---
203:								
Pirouette-----	0-4	10-18	10.0-15.0	7.9-9.0	1-5	---	0-2	1-12
	4-11	28-35	20.0-30.0	7.9-9.0	0-5	0-1	2-8	13-30
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
204:								
Pirouette-----	0-4	10-18	10.0-15.0	7.9-9.0	1-5	---	0-2	1-12
	4-11	28-35	20.0-30.0	7.9-9.0	0-5	0-1	2-8	13-30
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
Osobb-----	0-3	12-18	10.0-15.0	7.4-9.0	1-5	---	0-2	1-5
	3-17	12-18	10.0-15.0	7.9-9.6	5-10	---	2-4	1-5
	17-18	---	---	---	---	---	---	---
	18-22	---	---	---	---	---	---	---
Isolde-----	0-6	0-5	1.0-5.0	6.6-8.4	0-1	---	---	0-5
	6-60	0-5	1.0-5.0	6.6-8.4	0-3	0-1	0-2	0-5
206:								
Pirouette-----	0-4	10-18	10.0-15.0	7.9-9.0	1-5	---	0-2	1-12
	4-11	28-35	20.0-30.0	7.9-9.0	0-5	0-1	2-8	13-30
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
Osobb-----	0-3	12-18	10.0-15.0	7.4-9.0	1-5	---	0-2	1-5
	3-17	12-18	10.0-15.0	7.9-9.6	5-10	---	2-4	1-5
	17-18	---	---	---	---	---	---	---
	18-22	---	---	---	---	---	---	---
Old Camp-----	0-3	5-15	5.0-15.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
207:								
Pirouette-----	0-4	10-18	10.0-15.0	7.9-9.0	1-5	---	0-2	1-12
	4-11	28-35	20.0-30.0	7.9-9.0	0-5	0-1	2-8	13-30
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
207 (con.):								
Rezave-----	0-3	12-18	10.0-15.0	6.6-8.4	0-2	---	0-2	1-12
	3-9	35-55	30.0-45.0	7.9-9.0	1-5	---	2-4	13-30
	9-15	35-45	30.0-40.0	8.5-9.6	5-15	---	2-8	13-30
	15-19	---	---	---	---	---	---	---
Osobb-----	0-3	12-18	10.0-15.0	7.4-9.0	1-5	---	0-2	1-5
	3-17	12-18	10.0-15.0	7.9-9.6	5-10	---	2-4	1-5
	17-18	---	---	---	---	---	---	---
	18-22	---	---	---	---	---	---	---
208:								
Pirouette-----	0-4	10-18	10.0-15.0	7.9-9.0	1-5	---	0-2	1-12
	4-11	28-35	20.0-30.0	7.9-9.0	0-5	0-1	2-8	13-30
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
Theon-----	0-3	12-18	7.0-12.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	0-12
	12-16	---	---	---	---	---	---	---
Rubble Land-----	0-60	---	---	---	---	---	---	---
210:								
Biddleman-----	0-3	8-15	5.0-10.0	7.9-9.0	1-5	---	2-4	1-12
	3-10	20-30	15.0-25.0	7.9-9.0	1-5	0-1	0-8	13-30
	10-60	2-10	1.0-8.0	7.9-9.0	5-10	0-1	0-8	1-12
Biddleman-----	0-3	8-15	6.0-12.0	7.9-9.0	0-1	---	2-4	13-30
	3-10	20-30	14.0-22.0	7.9-9.0	1-5	---	0-8	13-30
	10-60	2-10	1.0-8.0	7.9-9.0	1-5	---	0-4	13-30
211:								
Biddleman-----	0-1	8-15	6.0-12.0	7.9-9.0	0-1	---	16-32	13-30
	1-4	20-27	12.0-18.0	8.5-9.0	1-5	---	4-16	13-30
	4-60	2-10	0.0-7.0	8.5-9.0	1-5	---	0-8	1-12
Trocken-----	0-3	8-18	5.0-12.0	7.4-8.4	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
Biddleman-----	0-3	8-15	6.0-12.0	7.9-9.0	0-1	---	2-4	13-30
	3-10	20-30	14.0-22.0	7.9-9.0	1-5	---	0-8	13-30
	10-60	2-10	1.0-8.0	7.9-9.0	1-5	---	0-4	13-30
213:								
Biddleman-----	0-3	8-15	6.0-12.0	7.9-9.0	0-1	---	2-4	13-30
	3-10	20-30	14.0-22.0	7.9-9.0	1-5	---	0-8	13-30
	10-60	2-10	1.0-8.0	7.9-9.0	1-5	---	0-4	13-30
Trocken-----	0-3	8-18	5.0-12.0	7.4-9.0	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
214:								
Biddleman-----	0-3	8-15	5.0-10.0	7.9-9.0	1-5	---	2-4	1-12
	3-10	20-30	15.0-25.0	7.9-9.0	1-5	0-1	0-8	13-30
	10-60	2-10	1.0-8.0	7.9-9.0	5-10	0-1	0-8	1-12
Trocken-----	0-3	8-18	5.0-12.0	7.4-8.4	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.4-8.4	1-5	0-1	2-4	5-12

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
214 (con.): Ruhe-----	0-4	0-5	1.0-5.0	7.9-9.0	1-5	---	2-4	0-5
	4-18	0-5	1.0-5.0	7.9-9.0	5-15	---	2-4	0-5
	18-28	---	---	---	---	---	---	---
	28-60	0-5	1.0-5.0	7.9-9.6	5-10	0-1	4-8	1-5
215: Biddleman-----	0-3	8-15	6.0-12.0	7.9-9.0	0-1	---	2-4	13-30
	3-10	20-30	14.0-22.0	7.9-9.0	1-5	---	0-8	13-30
	10-60	2-10	1.0-8.0	7.9-9.0	1-5	---	0-4	13-30
Isolde-----	0-6	0-5	1.0-5.0	6.6-8.4	0-1	---	---	0-5
	6-60	0-5	1.0-5.0	6.6-8.4	0-3	0-1	0-2	0-5
216: Biddleman-----	0-3	8-15	5.0-10.0	7.9-9.0	1-5	---	2-4	1-12
	3-10	20-30	15.0-25.0	7.9-9.0	1-5	0-1	0-8	13-30
	10-60	2-10	1.0-8.0	7.9-9.0	5-10	0-1	0-8	1-12
Bluewing-----	0-5	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	5-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
Trocken-----	0-3	5-15	3.0-10.0	7.9-9.0	1-5	---	0-2	0-12
	3-60	8-18	5.0-12.0	7.9-9.6	5-10	0-1	2-4	1-12
220: Bango-----	0-2	5-12	3.0-8.0	7.9-9.0	1-5	---	4-8	5-12
	2-12	20-30	12.0-19.0	7.9-9.0	1-5	---	4-8	5-12
	12-60	18-25	11.0-16.0	7.9-9.0	5-10	1-2	4-16	13-30
Stumble-----	0-4	3-10	2.0-8.0	6.6-8.4	---	---	0-2	0-5
	4-20	3-10	2.0-8.0	7.9-8.4	1-5	---	0-4	0-5
	20-60	3-10	2.0-8.0	7.9-9.0	1-5	---	0-8	0-5
221: Bango-----	0-4	0-5	0.0-4.0	7.4-8.4	0-1	---	4-8	5-12
	4-8	20-30	14.0-22.0	7.9-9.0	0-5	---	4-8	10-30
	8-60	18-30	11.0-22.0	7.9-9.0	0-5	0-1	4-8	13-30
Appian-----	0-6	15-20	9.0-13.0	7.9-9.0	1-5	---	0-4	5-12
	6-12	27-35	16.0-22.0	8.5-9.6	5-10	1-2	0-8	31-90
	12-16	2-5	1.0-5.0	7.4-9.6	---	---	0-2	0-5
	16-60	0-5	0.0-5.0	7.4-9.6	---	---	0-2	0-5
222: Bango-----	0-2	5-12	3.0-8.0	7.9-9.0	1-5	---	4-8	5-12
	2-12	20-30	12.0-19.0	7.9-9.0	1-5	---	4-8	5-12
	12-60	18-25	11.0-16.0	7.9-9.0	5-10	1-2	4-16	13-30
Playas-----	0-6	27-40	24.0-35.0	8.5-9.6	1-5	1-5	16-32	46-90
	6-60	35-70	30.0-60.0	8.5-9.6	1-10	1-10	16-32	46-90
Chuckles-----	0-7	12-22	7.0-14.0	7.9-9.0	1-5	---	16-32	13-30
	7-14	18-27	12.0-18.0	8.5-9.6	5-10	---	16-32	45-90
	14-35	18-27	12.0-18.0	8.5-9.6	5-15	---	16-32	45-90
	35-60	20-35	12.0-22.0	8.5-9.6	5-15	0-1	16-32	45-90
230: Rock Outcrop.								

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
230 (con.):								
Uripnes-----	0-4	10-18	6.0-12.0	6.1-7.8	0-1	---	---	---
	4-21	---	---	---	---	---	---	---
	21-25	---	---	---	---	---	---	---
Budihol-----	0-3	12-18	5.0-15.0	6.6-7.3	---	---	---	---
	3-7	12-18	5.0-15.0	6.6-7.3	---	---	---	---
	7-21	---	---	---	---	---	---	---
	21-25	---	---	---	---	---	---	---
231:								
Uripnes-----	0-4	10-18	6.0-12.0	6.1-7.8	0-1	---	---	---
	4-21	---	---	---	---	---	---	---
	21-25	---	---	---	---	---	---	---
Budihol-----	0-3	12-18	5.0-15.0	6.6-7.3	---	---	---	---
	3-7	12-18	5.0-15.0	6.6-7.3	---	---	---	---
	7-21	---	---	---	---	---	---	---
	21-25	---	---	---	---	---	---	---
Chill-----	0-4	5-10	5.0-11.0	6.6-7.8	---	---	---	---
	4-8	25-35	19.0-27.0	6.6-7.8	---	---	---	---
	8-22	---	---	---	---	---	---	---
232:								
Rock Outcrop.								
Uripnes-----	0-4	10-18	6.0-12.0	6.1-7.8	0-1	---	---	---
	4-21	---	---	---	---	---	---	---
	21-25	---	---	---	---	---	---	---
240:								
Watoopah-----	0-2	3-8	5.0-10.0	6.6-7.8	---	---	0-2	0-5
	2-16	10-18	5.0-15.0	6.6-7.8	---	---	0-2	0-5
	16-29	0-5	0.0-5.0	7.4-8.4	0-10	---	0-2	1-5
	29-60	0-5	0.0-5.0	7.9-9.0	5-15	---	0-4	1-12
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.0	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	8.5-9.6	5-10	---	8-32	31-45
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.6	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.6	1-10	---	8-16	31-90
	16-60	8-18	5.0-12.0	8.5-9.6	5-15	---	8-16	31-90
241:								
Watoopah-----	0-2	1-5	0.0-5.0	6.6-7.8	---	---	0-2	0-5
	2-16	10-18	5.0-15.0	6.6-7.8	---	---	0-2	0-5
	16-29	0-5	0.0-5.0	7.4-8.4	0-10	---	0-2	1-5
	29-60	0-5	0.0-5.0	7.9-9.0	5-15	---	0-4	1-12
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.6	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.6	1-10	---	8-16	31-90
	16-60	8-18	5.0-12.0	8.5-9.6	5-15	---	8-16	31-90
Wholan-----	0-6	5-15	3.0-10.0	7.4-9.0	---	---	0-4	0-12
	6-45	5-15	3.0-10.0	7.4-9.6	5-15	---	4-16	5-12
	45-60	2-10	1.0-7.0	7.4-9.6	5-15	---	8-16	0-12
250:								
Rock Outcrop.								

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
250 (con.): Rezave-----	0-3	27-35	17.0-22.0	6.6-8.4	---	---	0-2	1-12
	3-15	40-55	24.0-34.0	7.9-9.0	1-5	---	2-8	13-30
	15-19	---	---	---	---	---	---	---
Singatse-----	0-4	7-15	5.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
260: Appian-----	0-6	5-15	4.0-10.0	7.9-9.0	1-5	---	0-8	13-30
	6-12	27-35	16.0-22.0	8.5-9.6	5-10	1-2	0-8	31-90
	12-16	2-5	1.0-5.0	7.4-9.6	---	---	0-2	0-5
	16-60	0-5	0.0-5.0	7.4-9.6	---	---	0-2	0-5
Playas-----	0-6	27-40	24.0-35.0	8.5-9.6	1-5	1-5	16-32	46-90
	6-60	35-70	30.0-60.0	8.5-9.6	1-10	1-10	16-32	46-90
261: Appian-----	0-6	2-5	1.0-5.0	7.9-9.0	1-5	---	0-4	5-12
	6-12	27-35	16.0-22.0	8.5-9.6	5-10	1-2	0-8	31-90
	12-16	2-5	1.0-5.0	7.4-9.6	---	---	0-2	0-5
	16-60	0-5	0.0-5.0	7.4-9.6	---	---	0-2	0-5
262: Appian-----	0-6	5-15	4.0-10.0	7.9-9.0	1-5	---	0-8	13-30
	6-12	27-35	16.0-22.0	8.5-9.6	5-10	1-2	0-8	31-90
	12-16	2-5	1.0-5.0	7.4-9.6	---	---	0-2	0-5
	16-60	0-5	0.0-5.0	7.4-9.6	---	---	0-2	0-5
Juva-----	0-6	10-20	7.0-16.0	7.9-9.0	0-5	---	0-2	1-12
	6-60	5-15	4.0-11.0	7.9-9.0	1-10	---	0-4	13-30
Bango-----	0-4	5-10	4.0-7.0	7.9-9.0	1-5	---	4-8	5-12
	4-8	20-30	12.0-19.0	7.9-9.0	1-5	0-1	4-8	10-30
	8-60	18-25	11.0-16.0	7.9-9.0	5-10	0-1	4-8	13-45
270: Fubble-----	0-4	12-18	8.0-16.0	6.6-7.8	---	---	---	---
	4-14	25-35	15.0-22.0	6.6-8.4	---	---	---	0-2
	14-19	18-25	12.0-16.0	6.6-8.4	1-5	---	0-2	0-2
	19-29	---	---	---	---	---	---	---
Nicanor-----	0-2	15-22	11.0-17.0	6.6-7.8	---	---	---	---
	2-5	20-30	13.0-20.0	6.6-7.8	---	---	---	---
	5-25	---	---	---	---	---	---	---
	25-29	---	---	---	---	---	---	---
280: Trocken-----	0-9	5-12	3.0-9.0	8.5-9.6	1-5	---	16-32	13-60
	9-26	15-22	9.0-14.0	8.5-9.6	1-5	0-1	16-32	13-60
	26-43	3-10	2.0-7.0	8.5-9.6	5-10	0-1	4-16	13-30
	43-60	3-8	2.0-6.0	7.9-9.6	5-10	0-1	4-16	13-30
Chuckles-----	0-7	12-22	7.0-14.0	7.9-9.0	1-5	---	16-32	13-30
	7-14	18-27	12.0-18.0	8.5-9.6	5-10	---	16-32	45-90
	14-35	18-27	12.0-18.0	8.5-9.6	5-15	---	16-32	45-90
	35-60	20-35	12.0-22.0	7.9-9.6	5-15	0-1	16-32	45-90

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
281:								
Trocken-----	0-3	5-15	3.0-10.0	7.9-9.6	1-5	---	8-16	13-30
	3-60	8-18	5.0-12.0	7.9-9.6	5-10	0-1	8-16	13-30
Ragtown-----	0-6	15-25	10.0-17.0	8.5-9.0	1-10	---	16-32	13-30
	6-23	28-35	18.0-22.0	8.5-9.0	1-10	0-1	16-32	46-90
	23-60	35-45	21.0-25.0	8.5-9.0	1-10	0-2	4-16	13-30
283:								
Trocken-----	0-3	5-15	3.0-10.0	7.9-9.0	1-5	---	0-2	0-12
	3-60	8-18	5.0-12.0	7.9-9.6	5-10	0-1	2-4	1-12
Bluewing-----	0-7	3-10	2.0-8.0	7.4-9.0	0-2	---	0-2	0-5
	7-60	3-10	2.0-8.0	7.4-9.0	1-5	---	0-4	1-12
284:								
Trocken-----	0-3	8-18	5.0-12.0	7.9-9.0	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
290:								
Huxley-----	0-2	27-35	18.0-26.0	9.1-11.0	1-5	---	16-32	13-45
	2-10	35-50	21.0-35.0	9.1-11.0	1-5	---	16-32	13-45
	10-60	0-3	0.0-3.0	9.1-11.0	0-1	---	8-32	13-30
300:								
Rock Outcrop.								
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Colbar-----	0-6	10-22	5.0-25.0	7.4-8.4	---	---	0-2	---
	6-16	22-35	15.0-30.0	7.4-8.4	---	---	0-2	---
	16-21	10-22	5.0-25.0	7.9-8.4	---	---	0-2	---
	21-31	---	---	---	---	---	---	---
301:								
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Mirkwood-----	0-2	10-18	7.0-14.0	6.6-7.8	---	---	---	0-5
	2-11	25-35	18.0-26.0	6.6-7.8	0-1	---	---	0-5
	11-21	---	---	---	---	---	---	---
Nemico-----	0-3	5-10	3.0-7.0	7.9-9.0	0-1	---	0-2	1-12
	3-12	35-45	21.0-33.0	7.9-9.0	0-5	---	4-8	31-60
	12-15	10-15	6.0-10.0	7.9-9.0	1-5	---	8-16	31-45
	15-16	---	---	---	---	---	---	---
	16-20	---	---	---	---	---	---	---
302:								
Rock Outcrop.								
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Singatse-----	0-4	7-15	5.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
304:								
Old Camp-----	0-3	8-20	7.0-16.0	6.6-7.8	---	---	---	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Bombadil-----	0-2	12-20	9.0-16.0	6.6-7.8	---	---	---	---
	2-6	18-27	13.0-20.0	6.6-7.8	---	---	---	---
	6-10	25-35	16.0-23.0	6.6-7.8	0-1	---	---	---
	10-20	---	---	---	---	---	---	---
Loomer-----	0-7	15-25	10.0-25.0	6.6-7.8	---	---	---	---
	7-17	35-50	20.0-40.0	6.6-7.8	---	---	---	---
	17-21	---	---	---	---	---	---	---
305:								
Rock Outcrop.								
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Colbar-----	0-6	10-20	5.0-20.0	7.4-8.4	---	---	0-2	---
	6-16	22-35	15.0-30.0	7.4-8.4	---	---	0-2	---
	16-21	10-22	5.0-25.0	7.9-8.4	---	---	0-2	---
	21-31	---	---	---	---	---	---	---
307:								
Rock Outcrop.								
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Theon-----	0-3	12-20	7.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	0-12
	12-16	---	---	---	---	---	---	---
308:								
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Clanalpine-----	0-10	18-24	10.0-25.0	6.6-7.3	---	---	---	---
	10-39	25-35	15.0-30.0	6.6-7.8	---	---	---	---
	39-43	---	---	---	---	---	---	---
Colbar-----	0-6	10-22	5.0-25.0	7.4-8.4	---	---	0-2	---
	6-16	22-35	15.0-30.0	7.4-8.4	---	---	0-2	---
	16-21	10-22	5.0-25.0	7.9-8.4	---	---	0-2	---
	21-31	---	---	---	---	---	---	---
309:								
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Pickup-----	0-10	18-25	15.0-25.0	6.6-8.4	---	---	---	---
	10-36	40-55	25.0-45.0	6.6-8.4	---	---	0-2	---
	36-40	---	---	---	---	---	---	---



TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
309 (con.):								
Loomer-----	0-7	15-25	10.0-25.0	6.6-7.8	---	---	---	---
	7-17	35-50	20.0-40.0	6.6-7.8	---	---	---	---
	17-21	---	---	---	---	---	---	---
310:								
Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
Trocken-----	0-3	8-18	5.0-12.0	7.4-9.0	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
Bluewing-----	0-7	3-8	1.0-7.0	6.6-9.0	0-5	---	0-2	0-5
	7-60	3-8	1.0-7.0	6.6-9.0	5-10	---	0-4	0-5
311:								
Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
Trocken-----	0-3	8-18	5.0-12.0	7.4-9.0	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.6	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	7.9-9.6	5-10	---	8-16	31-45
313:								
Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
Ricert-----	0-8	12-20	8.0-18.0	7.9-8.4	1-3	---	0-2	5-12
	8-18	25-35	15.0-29.0	8.5-9.0	1-5	---	2-8	13-30
	18-26	22-32	14.0-27.0	8.5-9.0	2-10	---	2-8	13-45
	26-60	6-16	3.0-11.0	8.5-9.0	5-10	---	2-8	13-45
Trocken-----	0-3	5-15	3.0-10.0	7.4-9.0	0-1	---	0-2	5-12
	3-60	8-18	5.0-12.0	7.9-9.6	0-5	---	2-4	13-45
315:								
Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.6	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	7.9-9.6	5-10	---	8-16	31-45
Barnmot-----	0-2	40-50	35.0-45.0	7.9-8.4	0-3	---	0-2	1-5
	2-60	35-55	30.0-50.0	7.9-9.0	0-3	---	0-8	1-12

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
316: Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
317: Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
Cleaver-----	0-4	7-20	5.0-15.0	7.4-9.0	0-1	---	0-2	1-12
	4-12	25-35	18.0-25.0	7.4-8.4	---	---	0-2	1-12
	12-60	---	---	---	---	---	---	---
Trocken-----	0-3	8-18	5.0-12.0	7.4-9.0	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
320: Rock Outcrop.								
Jung-----	0-7	10-15	8.0-13.0	6.6-7.8	---	---	---	---
	7-15	35-45	28.0-37.0	7.9-9.0	0-2	---	0-2	---
	15-19	---	---	---	---	---	---	---
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
321: Jung-----	0-7	10-15	8.0-13.0	6.6-7.8	---	---	---	---
	7-15	35-45	28.0-37.0	7.9-9.0	0-2	---	0-2	---
	15-19	---	---	---	---	---	---	---
Desatoya-----	0-6	10-20	8.0-18.0	6.6-7.8	---	---	---	---
	6-15	35-45	28.0-38.0	7.4-8.4	0-2	---	---	---
	15-60	8-18	5.0-11.0	7.9-9.0	2-5	---	2-8	1-12
Roca-----	0-6	18-25	10.0-25.0	6.1-7.8	---	---	---	---
	6-25	35-50	20.0-40.0	6.6-8.4	0-10	---	0-2	0-5
	25-29	---	---	---	---	---	---	---
322: Jung-----	0-7	10-15	8.0-13.0	6.6-7.8	---	---	---	---
	7-15	35-45	28.0-37.0	7.9-9.0	0-2	---	0-2	---
	15-19	---	---	---	---	---	---	---
Puett-----	0-3	5-10	4.0-9.0	7.9-9.0	1-5	---	0-2	---
	3-11	5-10	3.0-8.0	7.9-9.0	1-5	0-1	0-2	0-5
	11-20	---	---	---	---	---	---	---
Buffaran-----	0-7	20-27	16.0-24.0	6.6-7.8	---	---	---	---
	7-15	35-50	28.0-42.0	6.6-8.4	0-1	---	0-4	---
	15-60	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
324:								
Jung-----	0-7	10-15	8.0-13.0	6.6-7.8	---	---	---	---
	7-15	35-45	28.0-37.0	7.9-9.0	0-2	---	0-2	---
	15-19	---	---	---	---	---	---	---
Clan Alpine-----	0-10	18-24	10.0-25.0	6.6-7.3	---	---	---	---
	10-39	25-35	15.0-30.0	6.6-7.8	---	---	---	---
	39-43	---	---	---	---	---	---	---
Colbar-----	0-6	10-22	5.0-25.0	7.4-8.4	---	---	0-2	---
	6-16	22-35	15.0-30.0	7.4-8.4	---	---	0-2	---
	16-21	10-22	5.0-25.0	7.9-8.4	---	---	0-2	---
	21-31	---	---	---	---	---	---	---
325:								
Jung-----	0-7	10-15	8.0-13.0	6.6-7.8	---	---	---	---
	7-15	35-45	28.0-37.0	7.9-9.0	0-2	---	0-2	---
	15-19	---	---	---	---	---	---	---
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Clan Alpine-----	0-10	18-24	10.0-25.0	6.6-7.3	---	---	---	---
	10-39	25-35	15.0-30.0	6.6-7.8	---	---	---	---
	39-43	---	---	---	---	---	---	---
330:								
Settlement-----	0-4	40-60	30.0-55.0	7.9-9.0	10-20	0-4	8-16	1-12
	4-12	40-60	25.0-50.0	8.5-9.6	10-20	0-4	8-16	13-30
	12-60	45-60	30.0-50.0	7.9-9.6	10-20	0-4	4-16	13-30
Louderback-----	0-4	2-8	2.0-6.0	9.1-11.0	1-5	---	2-4	13-30
	4-31	2-8	1.0-6.0	9.1-11.0	1-5	---	2-4	13-30
	31-60	5-10	3.0-6.0	7.9-9.0	1-5	---	4-8	13-30
Rustigate-----	0-10	18-27	10.0-20.0	7.9-9.6	1-20	---	0-4	1-12
	10-33	18-27	10.0-20.0	7.9-9.6	1-20	---	0-4	1-12
	33-60	8-20	5.0-15.0	7.9-9.6	1-20	---	0-4	1-12
331:								
Settlement-----	0-4	30-40	20.0-35.0	7.9-9.0	10-20	0-4	8-16	1-12
	4-12	40-60	25.0-50.0	8.5-9.6	10-20	0-4	8-16	13-30
	12-60	45-60	30.0-50.0	7.9-9.6	10-20	0-4	4-16	13-30
Chuckles-----	0-7	12-22	7.0-14.0	7.9-9.0	1-5	---	16-32	13-30
	7-14	18-27	12.0-18.0	8.5-9.6	5-10	---	16-32	45-90
	14-35	18-27	12.0-18.0	8.5-9.6	5-15	---	16-32	45-90
	35-60	20-35	12.0-22.0	7.9-9.6	5-15	0-1	16-32	45-90
Rustigate-----	0-10	18-27	10.0-20.0	7.9-9.6	1-20	---	0-4	1-12
	10-33	18-27	10.0-20.0	7.9-9.6	1-20	---	0-4	1-12
	33-60	8-20	5.0-15.0	7.9-9.6	1-20	---	0-4	1-12
340:								
Slaw-----	0-9	8-18	7.0-15.0	8.5-9.6	1-4	---	8-16	13-30
	9-60	25-35	16.0-25.0	8.5-9.6	1-4	0-5	16-32	30-99
Juva-----	0-6	10-20	7.0-16.0	7.9-9.0	1-5	---	0-2	1-12
	6-60	5-15	4.0-11.0	7.9-9.0	1-10	---	0-4	13-30

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
340 (con.): Wholan-----	0-7	5-15	3.0-10.0	7.4-9.6	0-1	---	2-8	0-12
	7-60	5-15	3.0-10.0	7.4-9.6	0-15	---	4-16	0-12
341: Slaw-----	0-9	8-18	7.0-15.0	8.5-9.6	1-4	---	8-16	13-30
	9-60	25-35	16.0-25.0	8.5-9.6	1-4	0-5	16-32	30-99
Chuckles-----	0-7	12-22	7.0-14.0	7.9-9.0	1-5	---	16-32	13-30
	7-14	18-27	12.0-18.0	8.5-9.6	5-10	---	16-32	45-90
	14-35	18-27	12.0-18.0	8.5-9.6	5-15	---	16-32	45-90
	35-60	20-35	12.0-22.0	7.9-9.6	5-15	0-1	16-32	45-90
342: Slaw-----	0-9	8-18	7.0-15.0	8.5-9.6	1-4	---	8-16	13-30
	9-60	25-35	16.0-25.0	8.5-9.6	1-4	0-5	16-32	30-99
Mazuma-----	0-5	5-15	3.0-9.0	8.5-9.6	1-5	---	8-32	13-45
	5-25	5-15	3.0-9.0	8.5-9.6	5-10	0-1	8-32	13-30
	25-60	5-15	3.0-9.0	7.9-9.6	5-10	0-1	2-32	13-30
Hessing-----	0-7	15-20	9.0-12.0	7.9-9.0	0-1	---	2-4	1-5
	7-13	20-30	12.0-18.0	7.9-9.0	0-1	---	2-4	1-5
	13-20	15-20	9.0-12.0	8.5-9.0	2-10	---	2-4	1-5
	20-27	15-27	9.0-16.0	8.5-9.0	2-5	---	4-16	5-12
	27-60	0-5	0.0-3.0	7.9-9.0	1-5	---	16-32	5-12
343: Slaw-----	0-9	8-18	7.0-15.0	8.5-9.6	1-4	---	8-16	13-30
	9-60	25-35	16.0-25.0	8.5-9.6	1-4	0-5	16-32	30-99
Trocken-----	0-9	15-22	9.0-15.0	8.5-9.6	1-5	---	16-32	13-60
	9-26	15-22	9.0-14.0	8.5-9.6	1-5	0-1	16-32	13-60
	26-43	3-10	2.0-7.0	8.5-9.6	5-10	0-1	4-16	13-30
	43-60	3-8	2.0-6.0	7.9-9.6	5-10	0-1	4-16	13-30
Chuckles-----	0-7	12-22	7.0-14.0	7.9-9.0	1-5	---	16-32	13-30
	7-14	18-27	12.0-18.0	8.5-9.6	5-10	---	16-32	45-90
	14-35	18-27	12.0-18.0	8.5-9.6	5-15	---	16-32	45-90
	35-60	20-35	12.0-22.0	7.9-9.6	5-15	0-1	16-32	45-90
344: Slaw-----	0-9	8-18	7.0-15.0	8.5-9.6	1-4	---	8-16	13-30
	9-60	25-35	16.0-25.0	8.5-9.6	1-4	0-5	16-32	30-99
Ragtown-----	0-6	10-15	7.0-11.0	8.5-9.0	1-10	---	16-32	13-30
	6-23	28-35	18.0-22.0	8.5-9.0	1-10	0-1	16-32	46-90
	23-60	35-45	21.0-25.0	8.5-9.0	1-10	0-2	4-16	13-30
350: Ricert-----	0-8	12-20	8.0-18.0	7.9-8.4	1-3	---	0-2	5-12
	8-18	25-35	15.0-29.0	8.5-9.0	1-5	---	2-8	13-30
	18-26	22-32	14.0-27.0	8.5-9.0	2-10	---	2-8	13-45
	26-60	6-16	3.0-11.0	8.5-9.0	5-10	---	2-8	13-45
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
351:								
Ricert-----	0-8	12-20	8.0-18.0	7.9-8.4	1-3	---	0-2	5-12
	8-18	25-35	15.0-29.0	8.5-9.0	1-5	---	2-8	13-30
	18-26	22-32	14.0-27.0	8.5-9.0	2-10	---	2-8	13-45
	26-60	6-16	3.0-11.0	8.5-9.0	5-10	---	2-8	13-45
Chilper-----	0-2	5-10	3.0-7.0	7.9-8.4	0-5	---	0-2	1-5
	2-5	5-10	3.0-7.0	7.9-8.4	0-5	---	0-4	1-5
	5-25	35-50	21.0-31.0	7.9-9.0	5-10	1-10	16-32	31-45
	25-60	5-10	3.0-7.0	8.5-9.0	5-10	0-2	16-32	31-45
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
352:								
Ricert-----	0-5	12-20	8.0-18.0	7.9-8.4	1-3	---	0-2	5-12
	5-14	25-35	15.0-29.0	8.5-9.0	1-5	---	2-8	13-30
	14-20	22-32	14.0-27.0	8.5-9.0	2-10	---	2-8	13-45
	20-60	6-15	3.0-11.0	8.5-9.0	5-10	---	2-8	13-45
Desatoya-----	0-6	10-20	8.0-18.0	6.6-7.8	---	---	---	---
	6-15	35-45	28.0-38.0	7.4-8.4	0-2	---	---	---
	15-60	8-18	5.0-11.0	7.9-9.0	2-5	---	2-8	1-12
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-23.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
353:								
Ricert-----	0-8	12-20	8.0-18.0	7.9-8.4	1-3	---	0-2	5-12
	8-18	25-35	15.0-29.0	8.5-9.0	1-5	---	2-8	13-30
	18-26	22-32	14.0-27.0	8.5-9.0	2-10	---	2-8	13-45
	26-60	6-16	3.0-11.0	8.5-9.0	5-10	---	2-8	13-45
Trocken-----	0-3	5-15	3.0-10.0	7.4-9.0	1-5	---	0-2	0-12
	3-60	8-18	5.0-12.0	7.9-9.6	5-10	0-1	2-4	1-12
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
358:								
Ricert-----	0-8	12-20	8.0-18.0	7.9-8.4	1-3	---	0-2	5-12
	8-18	25-35	15.0-29.0	8.5-9.0	1-5	---	2-8	13-30
	18-26	22-32	14.0-27.0	8.5-9.0	2-10	---	2-8	13-45
	26-60	6-16	3.0-11.0	8.5-9.0	5-10	---	2-8	13-45
Desatoya-----	0-6	10-20	8.0-18.0	6.6-7.8	---	---	---	---
	6-15	35-45	28.0-38.0	7.4-8.4	0-2	---	---	---
	15-60	8-18	5.0-11.0	7.9-9.0	2-5	---	2-8	1-12
Trocken-----	0-3	5-15	3.0-10.0	7.4-9.0	0-1	---	0-2	5-12
	3-60	8-18	5.0-12.0	7.9-9.6	0-5	---	2-4	13-45
359:								
Ricert-----	0-5	12-20	8.0-18.0	7.9-8.4	1-3	---	0-2	5-12
	5-14	25-35	15.0-29.0	8.5-9.0	1-5	---	2-8	13-30
	14-20	22-32	14.0-27.0	8.5-9.0	2-10	---	2-8	13-45
	20-60	6-15	3.0-11.0	8.5-9.0	5-10	---	2-8	13-45

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
359 (con.): Celeton-----	0-2	8-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---
Trocken-----	0-3	8-18	5.0-12.0	7.4-9.0	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
360: Ricert-----	0-8	12-20	8.0-18.0	7.9-8.4	1-3	---	0-2	5-12
	8-18	25-35	15.0-29.0	8.5-9.0	1-5	---	2-8	13-30
	18-26	22-32	14.0-27.0	8.5-9.0	2-10	---	2-8	13-45
	26-60	6-16	3.0-11.0	8.5-9.0	5-10	---	2-8	13-45
Trocken-----	0-3	5-15	3.0-10.0	7.4-9.0	0-1	---	0-2	5-12
	3-60	8-18	5.0-12.0	7.9-9.6	0-5	---	2-4	13-45
Rebel-----	0-11	8-15	10.0-27.0	6.6-7.8	0-1	---	0-4	0-5
	11-60	10-18	8.0-20.0	7.4-9.0	1-10	---	0-4	1-12
370: Duco-----	0-4	10-20	10.0-20.0	6.1-7.8	---	---	---	---
	4-11	27-35	20.0-30.0	6.1-7.8	---	---	---	---
	11-15	---	---	---	---	---	---	---
Clan Alpine-----	0-10	18-24	10.0-25.0	6.6-7.3	---	---	---	---
	10-39	25-35	15.0-30.0	6.6-7.8	---	---	---	---
	39-43	---	---	---	---	---	---	---
Jung-----	0-7	10-15	8.0-13.0	6.6-7.8	---	---	---	---
	7-15	35-45	28.0-37.0	7.9-9.0	0-2	---	0-2	---
	15-19	---	---	---	---	---	---	---
371: Duco-----	0-4	10-20	10.0-20.0	6.1-7.8	---	---	---	---
	4-11	27-35	20.0-30.0	6.1-7.8	---	---	---	---
	11-15	---	---	---	---	---	---	---
Clan Alpine-----	0-10	18-24	10.0-25.0	6.6-7.3	---	---	---	---
	10-39	25-35	15.0-30.0	6.6-7.8	---	---	---	---
	39-43	---	---	---	---	---	---	---
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
373: Duco-----	0-4	10-20	10.0-20.0	6.1-7.8	---	---	---	---
	4-11	27-35	20.0-30.0	6.1-7.8	---	---	---	---
	11-15	---	---	---	---	---	---	---
Itca-----	0-4	15-27	11.0-22.0	6.6-7.8	---	---	---	---
	4-16	35-45	22.0-31.0	6.6-8.4	---	---	0-2	0-1
	16-20	---	---	---	---	---	---	---
Puett-----	0-3	5-10	4.0-9.0	7.9-9.0	1-5	---	0-2	---
	3-11	5-10	3.0-8.0	7.9-9.0	1-5	0-1	0-2	0-5
	11-20	---	---	---	---	---	---	---
380: Rock Outcrop.								

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
380 (con.):								
Itca-----	0-4	15-27	11.0-25.0	6.6-7.8	---	---	---	---
	4-16	35-45	23.0-38.0	6.6-8.4	---	---	0-2	---
	16-20	---	---	---	---	---	---	---
Clan Alpine-----	0-10	18-24	10.0-25.0	6.6-7.3	---	---	---	---
	10-39	25-35	15.0-30.0	6.6-7.8	---	---	---	---
	39-43	---	---	---	---	---	---	---
381:								
Itca-----	0-4	15-27	11.0-25.0	6.6-7.8	---	---	---	---
	4-16	35-45	23.0-38.0	6.6-8.4	---	---	0-2	---
	16-20	---	---	---	---	---	---	---
Reluctan-----	0-9	15-22	15.0-25.0	6.6-7.8	---	---	---	---
	9-25	25-35	15.0-30.0	6.6-7.8	---	---	---	---
	25-29	---	---	---	---	---	---	---
Walti-----	0-4	10-20	8.0-18.0	6.6-7.8	---	---	---	---
	4-10	27-35	18.0-25.0	6.6-7.8	---	---	---	---
	10-22	50-60	31.0-40.0	6.6-7.8	---	---	---	---
	22-26	---	---	---	---	---	---	---
390:								
Defler-----	0-7	8-18	5.0-15.0	7.4-9.0	1-5	---	0-2	---
	7-44	8-18	5.0-15.0	7.4-9.0	5-10	---	0-4	---
	44-60	5-10	0.0-5.0	7.4-9.0	5-10	---	8-16	0-12
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
391:								
Defler-----	0-7	8-18	5.0-15.0	7.4-9.0	1-5	---	0-2	---
	7-44	8-18	5.0-15.0	7.4-9.0	5-10	---	0-4	---
	44-60	5-10	0.0-5.0	7.4-9.0	5-10	---	8-16	0-12
Trocken-----	0-3	5-15	3.0-10.0	7.4-9.0	0-1	---	0-2	5-12
	3-60	8-18	5.0-12.0	7.9-9.6	0-5	---	2-4	13-45
400:								
Chuckles-----	0-7	12-22	7.0-14.0	7.9-9.0	1-5	---	16-32	13-30
	7-14	18-27	12.0-18.0	8.5-9.6	5-10	---	16-32	45-90
	14-35	18-27	12.0-18.0	8.5-9.6	5-15	---	16-32	45-90
	35-60	20-35	12.0-22.0	7.9-9.6	5-15	0-1	16-32	45-90
Playas-----	0-6	27-40	24.0-35.0	8.5-9.6	1-5	1-5	16-32	46-90
	6-60	35-70	30.0-60.0	8.5-9.6	1-10	1-10	16-32	46-90
401:								
Chuckles-----	0-7	12-22	7.0-14.0	7.9-9.0	1-5	---	16-32	13-30
	7-14	18-27	12.0-18.0	8.5-9.6	5-10	---	16-32	45-90
	14-35	18-27	12.0-18.0	8.5-9.6	5-15	---	16-32	45-90
	35-60	20-35	12.0-22.0	7.9-9.6	5-15	0-1	16-32	45-90
Bango-----	0-2	5-12	3.0-8.0	7.9-9.0	1-2	---	4-8	5-12
	2-12	20-30	12.0-19.0	7.9-9.0	1-5	---	4-8	5-12
	12-60	18-25	11.0-16.0	7.9-9.0	5-10	1-2	4-16	13-30

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
402:								
Chuckles-----	0-7	12-22	7.0-14.0	7.9-9.0	1-5	---	16-32	13-30
	7-14	18-27	12.0-18.0	8.5-9.6	5-10	---	16-32	45-90
	14-35	18-27	12.0-18.0	8.5-9.6	5-15	---	16-32	45-90
	35-60	20-35	12.0-22.0	7.9-9.6	5-15	0-1	16-32	45-90
Playas-----	0-6	27-40	24.0-35.0	8.5-9.6	1-5	1-5	16-32	46-90
	6-60	35-70	30.0-60.0	8.5-9.6	1-10	1-10	16-32	46-90
Slaw-----	0-9	8-18	7.0-15.0	8.5-9.6	1-4	---	8-16	13-30
	9-60	25-35	16.0-25.0	8.5-9.6	1-4	0-5	16-32	30-99
404:								
Chuckles-----	0-7	12-22	7.0-14.0	7.9-9.0	1-5	---	16-32	13-30
	7-14	18-27	12.0-18.0	8.5-9.6	5-10	---	16-32	45-90
	14-35	18-27	12.0-18.0	8.5-9.6	5-15	---	16-32	45-90
	35-60	20-35	12.0-22.0	7.9-9.6	5-15	0-1	16-32	45-90
Settlement-----	0-4	40-60	30.0-55.0	7.9-9.0	10-20	0-4	8-16	1-12
	4-12	40-60	25.0-50.0	8.5-9.6	10-20	0-4	8-16	13-30
	12-60	45-60	30.0-50.0	7.9-9.6	10-20	0-4	4-16	13-30
Rebel-----	0-11	8-15	10.0-27.0	6.6-7.8	0-1	---	0-4	0-5
	11-60	10-18	8.0-20.0	7.4-9.0	1-10	---	0-4	1-12
410:								
Buffaran-----	0-7	20-27	16.0-24.0	6.6-7.8	---	---	---	---
	7-15	35-50	28.0-42.0	6.6-8.4	0-1	---	0-4	---
	15-60	---	---	---	---	---	---	---
Desatoya-----	0-6	10-20	8.0-18.0	6.6-7.8	---	---	---	---
	6-15	35-45	28.0-38.0	7.4-8.4	0-2	---	---	---
	15-60	8-18	5.0-11.0	7.9-9.0	2-5	---	2-8	1-12
411:								
Buffaran-----	0-7	20-27	16.0-24.0	6.6-7.8	---	---	---	---
	7-15	35-50	28.0-42.0	6.6-8.4	0-1	---	0-4	---
	15-60	---	---	---	---	---	---	---
Rebel-----	0-11	8-15	10.0-27.0	6.6-7.8	0-1	---	0-4	0-5
	11-60	10-18	8.0-20.0	7.4-9.0	1-10	---	0-4	1-12
Puett-----	0-3	5-10	4.0-9.0	7.9-9.0	1-5	---	0-2	---
	3-11	5-10	3.0-8.0	7.9-9.0	1-5	0-1	0-2	0-5
	11-20	---	---	---	---	---	---	---
420:								
Trocken-----	0-3	5-15	3.0-10.0	7.4-9.0	0-1	---	0-2	5-12
	3-60	8-18	5.0-12.0	7.9-9.6	0-5	---	2-4	13-45
Hessing-----	0-7	15-20	9.0-12.0	7.9-9.0	0-1	---	2-4	1-5
	7-13	20-30	12.0-18.0	7.9-9.0	0-1	---	2-4	1-5
	13-20	15-20	9.0-12.0	8.5-9.0	2-10	---	2-4	1-5
	20-27	15-27	9.0-16.0	8.5-9.0	2-5	---	4-16	5-12
	27-60	0-5	0.0-3.0	7.9-9.0	1-5	---	16-32	5-12
Dun Glen-----	0-5	11-16	7.0-13.0	7.4-8.4	---	---	2-4	1-12
	5-12	11-16	15.0-25.0	7.4-8.4	---	---	2-4	1-12
	12-60	9-14	5.0-15.0	7.9-9.6	1-10	0-1	2-4	13-45



TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
422:								
Trocken-----	0-3	5-15	3.0-10.0	7.4-9.0	0-1	---	0-2	5-12
	3-60	8-18	5.0-12.0	7.9-9.6	0-5	---	2-4	13-45
Hessing-----	0-7	15-20	9.0-12.0	7.9-9.0	0-1	---	2-4	1-5
	7-13	20-30	12.0-18.0	7.9-9.0	0-1	---	2-4	1-5
	13-20	15-20	9.0-12.0	8.5-9.0	2-10	---	2-4	1-5
	20-27	15-27	9.0-16.0	8.5-9.0	2-5	---	4-16	5-12
	27-60	0-5	0.0-3.0	7.9-9.0	1-5	---	16-32	5-12
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
423:								
Trocken-----	0-3	8-18	5.0-12.0	7.4-9.0	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
Bluewing-----	0-7	3-8	1.0-7.0	6.6-9.0	0-5	---	0-2	0-5
	7-60	3-8	1.0-7.0	6.6-9.0	5-10	---	0-4	0-5
Trocken-----	0-9	5-12	3.0-9.0	8.5-9.6	1-5	---	16-32	13-60
	9-26	15-22	9.0-14.0	8.5-9.6	1-5	0-1	16-32	13-60
	26-43	3-10	2.0-7.0	8.5-9.6	5-10	0-1	4-16	13-30
	43-60	3-8	2.0-6.0	7.9-9.6	5-10	0-1	4-16	13-30
425:								
Trocken-----	0-3	5-15	3.0-10.0	7.4-9.0	0-1	---	0-2	5-12
	3-60	8-18	5.0-12.0	7.9-9.6	0-5	---	2-4	13-45
Hessing-----	0-7	15-20	9.0-12.0	7.9-9.0	0-1	---	2-4	1-5
	7-13	20-30	12.0-18.0	7.9-9.0	0-1	---	2-4	1-5
	13-20	15-20	9.0-12.0	8.5-9.0	2-10	---	2-4	1-5
	20-27	15-27	9.0-16.0	8.5-9.0	2-5	---	4-16	5-12
	27-60	0-5	0.0-3.0	7.9-9.0	1-5	---	16-32	5-12
Defler-----	0-7	8-18	5.0-15.0	7.4-9.0	1-5	---	0-2	---
	7-44	8-18	5.0-15.0	7.4-9.0	5-10	---	0-4	---
	44-60	5-10	0.0-5.0	7.4-9.0	5-10	---	8-16	0-12
430:								
Rock Outcrop.								
Kram-----	0-5	8-12	7.0-11.0	7.9-9.0	20-30	---	0-2	---
	5-14	8-18	5.0-13.0	7.9-9.0	20-30	---	2-8	1-5
	14-18	---	---	---	---	---	---	---
Attella-----	0-3	12-22	11.0-21.0	7.4-8.4	5-15	---	0-2	0-1
	3-7	15-27	11.0-20.0	7.4-8.4	5-15	---	0-2	0-1
	7-11	---	---	---	---	---	---	---
432:								
Rock Outcrop.								
Kram-----	0-5	8-12	7.0-11.0	7.9-9.0	20-30	---	0-2	---
	5-14	8-18	5.0-13.0	7.9-9.0	20-30	---	2-8	1-5
	14-18	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
432 (con.):								
Findout-----	0-3	12-18	8.0-13.0	7.9-9.0	20-40	---	0-2	0-5
	3-8	25-35	16.0-23.0	7.9-9.0	20-40	---	0-2	0-5
	8-14	18-27	11.0-17.0	7.9-9.0	20-40	---	0-2	0-5
	14-18	---	---	---	---	---	---	---
433:								
Rock Outcrop.								
Kram-----	0-5	8-12	7.0-11.0	7.9-9.0	20-30	---	0-2	---
	5-14	8-18	5.0-13.0	7.9-9.0	20-30	---	2-8	1-5
	14-18	---	---	---	---	---	---	---
Hopeka-----	0-9	18-27	10.0-20.0	7.9-9.0	30-50	---	0-2	---
	9-13	---	---	---	---	---	---	---
440:								
Ravenswood-----	0-8	14-22	15.0-30.0	6.6-7.8	---	---	---	---
	8-12	32-40	20.0-35.0	6.6-7.8	---	---	---	---
	12-23	35-50	20.0-40.0	6.6-7.8	---	---	---	---
	23-27	---	---	---	---	---	---	---
Itca-----	0-4	15-27	11.0-25.0	6.6-7.8	---	---	---	---
	4-16	35-45	23.0-38.0	6.6-8.4	---	---	0-2	---
	16-20	---	---	---	---	---	---	---
Walti-----	0-4	10-20	10.0-20.0	6.6-7.8	---	---	---	---
	4-10	27-35	18.0-25.0	6.6-7.8	---	---	---	---
	10-22	50-60	30.0-36.0	6.6-7.8	---	---	---	---
	22-26	---	---	---	---	---	---	---
450:								
Wholan-----	0-7	5-15	3.0-10.0	7.4-8.4	0-1	---	2-4	0-12
	7-60	5-15	3.0-10.0	7.4-9.6	0-15	---	4-16	0-12
Wholan-----	0-6	5-15	3.0-10.0	7.4-9.0	---	---	0-4	0-12
	6-45	5-15	3.0-10.0	7.4-9.6	5-15	---	4-16	5-12
	45-60	2-10	1.0-7.0	7.4-9.6	5-15	---	8-16	0-12
Defler-----	0-7	8-18	5.0-15.0	7.4-9.0	1-5	---	0-2	---
	7-44	8-18	5.0-15.0	7.4-9.0	5-10	---	0-4	---
	44-60	5-10	0.0-5.0	7.4-9.0	5-10	---	8-16	0-12
460:								
Juva-----	0-6	10-20	7.0-16.0	7.9-9.0	1-5	---	0-2	1-12
	6-60	5-15	4.0-11.0	7.9-9.0	1-10	---	0-4	13-30
Wholan-----	0-7	5-15	3.0-10.0	7.4-9.0	0-1	---	2-4	0-12
	7-60	5-15	3.0-10.0	7.4-9.6	0-15	---	4-16	0-12
Stumble-----	0-4	3-10	2.0-8.0	6.6-8.4	---	---	0-2	0-5
	4-20	3-10	2.0-8.0	7.9-8.4	1-5	---	0-4	0-5
	20-60	3-10	2.0-8.0	7.9-9.0	1-5	---	0-8	0-5
470:								
Hessing-----	0-7	15-20	9.0-12.0	7.9-9.0	0-1	---	2-4	1-5
	7-13	20-30	12.0-18.0	7.9-9.0	0-1	---	2-4	1-5
	13-20	15-20	9.0-12.0	8.5-9.0	2-10	---	2-4	1-5
	20-27	15-27	9.0-16.0	8.5-9.0	2-5	---	4-16	5-12
	27-60	0-5	0.0-3.0	7.9-9.0	1-5	---	16-32	5-12

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
470 (con.):								
Wholan-----	0-7	5-15	3.0-10.0	7.4-9.0	0-1	---	2-4	0-12
	7-60	5-15	3.0-10.0	7.4-9.6	0-15	---	4-16	0-12
Dun Glen-----	0-5	11-16	7.0-13.0	7.4-8.4	---	---	2-4	1-12
	5-12	11-16	15.0-25.0	7.4-8.4	---	---	2-4	1-12
	12-60	9-14	5.0-15.0	7.9-9.6	1-10	0-1	2-4	13-45
471:								
Hessing-----	0-7	15-20	9.0-12.0	7.9-9.0	0-1	---	2-4	1-5
	7-13	20-30	12.0-18.0	7.9-9.0	0-1	---	2-4	1-5
	13-20	15-20	9.0-12.0	8.5-9.0	2-10	---	2-4	1-5
	20-27	15-27	9.0-16.0	8.5-9.0	2-5	---	4-16	5-12
	27-60	0-5	0.0-3.0	7.9-9.0	1-5	---	16-32	5-12
Dun Glen-----	0-5	11-16	7.0-13.0	7.4-8.4	---	---	2-4	1-12
	5-12	11-16	15.0-25.0	7.4-8.4	---	---	2-4	1-12
	12-60	9-14	5.0-15.0	7.9-9.6	1-10	0-1	2-4	13-45
Bango-----	0-2	5-12	3.0-8.0	7.9-9.0	1-5	---	4-8	5-12
	2-12	20-30	12.0-19.0	7.9-9.0	1-5	---	4-8	5-12
	12-60	18-25	11.0-16.0	7.9-9.0	5-10	1-2	4-16	13-30
480:								
Yody-----	0-7	5-10	4.0-10.0	7.9-8.4	---	---	0-2	0-5
	7-16	20-35	13.0-23.0	7.9-8.4	1-5	---	2-4	1-12
	16-30	5-10	3.0-7.0	7.9-9.0	5-10	---	2-4	1-12
	30-60	---	---	---	---	---	---	---
Buffaran-----	0-7	20-27	16.0-24.0	6.6-7.8	---	---	---	---
	7-15	35-50	28.0-42.0	6.6-8.4	0-1	---	0-4	---
	15-60	---	---	---	---	---	---	---
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
481:								
Yody-----	0-7	5-10	4.0-10.0	7.9-8.4	---	---	0-2	0-5
	7-16	20-35	13.0-23.0	7.9-8.4	1-5	---	2-4	1-12
	16-30	5-10	3.0-7.0	7.9-9.0	5-10	---	2-4	1-12
	30-60	---	---	---	---	---	---	---
Ricert-----	0-8	12-20	8.0-18.0	7.9-8.4	1-3	---	0-2	1-12
	8-18	25-35	15.0-29.0	8.5-9.0	1-5	---	2-8	13-30
	18-26	22-32	14.0-27.0	8.5-9.0	2-10	---	2-8	13-45
	26-60	6-16	3.0-11.0	8.5-9.0	5-10	---	2-8	13-45
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
484:								
Yody-----	0-7	5-10	4.0-10.0	7.9-8.4	---	---	0-2	0-5
	7-16	20-35	13.0-23.0	7.9-8.4	1-5	---	2-4	1-12
	16-30	5-10	3.0-7.0	7.9-9.0	5-10	---	2-4	1-12
	30-60	---	---	---	---	---	---	---
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
491:								
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
Rebel-----	0-11	8-15	10.0-27.0	6.6-7.8	0-1	---	0-4	0-5
	11-60	10-18	8.0-20.0	7.4-9.0	1-10	---	0-4	1-12
Wholan-----	0-6	5-15	3.0-10.0	7.4-9.0	---	---	0-4	0-12
	6-45	5-15	3.0-10.0	7.4-9.6	5-15	---	4-16	5-12
	45-60	2-10	1.0-7.0	7.4-9.6	5-15	---	8-16	0-12
492:								
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
Rebel-----	0-11	8-15	10.0-27.0	6.6-7.8	0-1	---	0-4	0-5
	11-60	10-18	8.0-20.0	7.4-9.0	1-10	---	0-4	1-12
494:								
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.0	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.0	1-10	---	8-16	30-130
	16-60	8-18	5.0-12.0	8.5-9.0	5-15	---	8-32	31-90
Rebel-----	0-11	8-15	10.0-27.0	6.6-7.8	0-1	---	0-4	0-5
	11-60	10-18	8.0-20.0	7.4-9.0	1-10	---	0-4	1-12
500:								
Louderback-----	0-4	2-8	2.0-6.0	9.1-11.0	1-5	---	2-4	13-30
	4-31	2-8	1.0-6.0	9.1-11.0	1-5	---	2-4	13-30
	31-60	5-10	3.0-6.0	7.9-9.0	1-5	---	4-8	13-30
Rustigate-----	0-10	18-27	10.0-20.0	7.9-9.6	1-20	---	0-4	1-12
	10-33	18-27	10.0-20.0	7.9-9.6	1-20	---	0-4	1-12
	33-60	8-20	5.0-15.0	7.9-9.6	1-20	---	0-4	1-12
Isolde-----	0-6	0-5	0.0-5.0	6.6-8.4	---	---	4-8	0-12
	6-60	0-5	0.0-5.0	6.6-8.4	0-10	---	0-4	0-12
511:								
Grumblen-----	0-4	16-24	11.0-18.0	7.4-8.4	---	---	---	---
	4-18	35-50	21.0-31.0	7.9-8.4	1-5	---	0-4	0-5
	18-22	---	---	---	---	---	---	---
Pickup-----	0-10	14-22	10.0-18.0	6.6-8.4	---	---	---	---
	10-36	40-55	25.0-37.0	6.6-8.4	---	---	0-2	0-5
	36-40	---	---	---	---	---	---	---
520:								
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-23.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
Bluewing-----	0-7	3-10	2.0-8.0	7.4-9.0	0-2	---	0-2	0-5
	7-60	3-10	2.0-8.0	7.4-9.0	1-5	---	0-4	1-12

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
520 (con.):								
Inmo-----	0-8	3-8	0.0-5.0	7.9-9.0	1-5	---	0-2	1-12
	8-40	2-8	0.0-5.0	7.9-9.0	1-5	---	2-4	1-12
	40-60	5-10	0.0-8.0	7.9-9.6	1-5	---	2-4	1-12
530:								
Cleaver-----	0-4	7-20	5.0-15.0	6.6-9.0	0-1	---	0-2	1-12
	4-12	25-35	18.0-25.0	6.6-8.4	---	---	0-2	1-12
	12-60	---	---	---	---	---	---	---
Trocken-----	0-3	8-18	5.0-12.0	8.5-9.6	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
Bluewing-----	0-7	3-10	2.0-8.0	7.4-9.0	0-2	---	0-2	0-5
	7-60	3-10	2.0-8.0	7.4-9.0	1-5	---	0-4	1-12
532:								
Cleaver-----	0-4	7-20	5.0-15.0	6.6-9.0	0-1	---	0-2	1-12
	4-12	25-35	18.0-25.0	6.6-8.4	---	---	0-2	1-12
	12-60	---	---	---	---	---	---	---
Ricert-----	0-8	12-20	8.0-18.0	7.9-8.4	1-3	---	0-2	5-12
	8-18	25-35	15.0-29.0	8.5-9.0	1-5	---	2-8	13-30
	18-26	22-32	14.0-27.0	8.5-9.0	2-10	---	2-8	13-45
	26-60	6-16	3.0-11.0	8.5-9.0	5-10	---	2-8	13-45
Barnmot-----	0-2	40-50	35.0-45.0	7.9-8.4	0-3	---	0-2	1-5
	2-60	35-55	30.0-50.0	7.9-9.0	0-3	---	0-8	1-12
533:								
Cleaver-----	0-4	7-20	5.0-15.0	6.6-9.0	0-1	---	0-2	1-12
	4-12	25-35	18.0-25.0	6.6-8.4	---	---	0-2	1-12
	12-60	---	---	---	---	---	---	---
Buffaran-----	0-7	20-27	16.0-24.0	6.6-7.8	---	---	---	---
	7-15	35-50	28.0-42.0	6.6-8.4	0-1	---	0-4	---
	15-60	---	---	---	---	---	---	---
535:								
Cleaver-----	0-4	5-12	4.0-9.0	6.6-9.0	0-1	---	0-2	1-12
	4-12	25-35	18.0-25.0	6.6-8.4	---	---	0-2	1-12
	12-60	---	---	---	---	---	---	---
Bundorf-----	0-2	10-27	10.0-20.0	7.9-9.0	1-5	---	0-2	1-5
	2-11	35-50	30.0-40.0	7.9-9.0	1-5	---	0-2	1-12
	11-14	35-50	30.0-40.0	8.5-9.6	5-10	0-1	0-2	5-12
	14-45	---	---	---	---	---	---	---
536:								
Cleaver-----	0-4	5-12	4.0-9.0	6.6-9.0	0-1	---	0-2	1-12
	4-12	25-35	18.0-25.0	6.6-8.4	---	---	0-2	1-12
	12-60	---	---	---	---	---	---	---
Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
537:								
Cleaver-----	0-4	5-12	4.0-9.0	6.6-9.0	0-1	---	0-2	1-12
	4-12	25-35	18.0-25.0	6.6-8.4	---	---	0-2	1-12
	12-60	---	---	---	---	---	---	---
Otomo-----	0-3	5-18	4.0-14.0	7.9-9.0	0-3	---	0-2	5-12
	3-12	5-18	4.0-14.0	8.5-9.0	1-5	---	0-4	5-30
	12-22	---	---	---	---	---	---	---
	22-60	5-10	4.0-8.0	8.5-9.6	1-5	---	0-4	5-30
538:								
Cleaver-----	0-4	5-12	4.0-9.0	7.4-9.0	0-1	---	0-2	1-12
	4-12	25-35	18.0-25.0	6.6-8.4	---	---	0-2	1-12
	12-60	---	---	---	---	---	---	---
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.0	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	8.5-9.6	5-10	---	8-32	31-45
Roic-----	0-1	10-15	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	1-6	12-18	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	6-10	---	---	---	---	---	---	---
540:								
Douhide-----	0-7	20-27	14.0-21.0	6.6-7.8	---	---	---	---
	7-15	35-50	21.0-32.0	6.6-7.8	---	---	---	---
	15-19	---	---	---	---	---	---	---
Itca-----	0-4	15-27	11.0-25.0	6.6-7.8	---	---	---	---
	4-16	35-45	23.0-38.0	6.6-8.4	---	---	0-2	---
	16-20	---	---	---	---	---	---	---
Ravenswood-----	0-8	14-22	15.0-30.0	6.6-7.8	---	---	---	---
	8-12	32-40	20.0-35.0	6.6-7.8	---	---	---	---
	12-23	35-50	20.0-40.0	6.6-7.8	---	---	---	---
	23-27	---	---	---	---	---	---	---
551:								
Yerington-----	0-3	0-4	1.0-5.0	7.4-8.4	---	---	0-2	1-5
	3-60	2-5	1.0-5.0	8.5-9.0	1-5	---	0-2	5-12
560:								
Rock Outcrop.								
Izod-----	0-4	18-25	13.0-19.0	7.4-8.4	40-50	---	0-2	---
	4-8	18-25	11.0-17.0	7.4-8.4	40-50	---	0-2	---
	8-12	---	---	---	---	---	---	---
572:								
Rawe-----	0-1	6-12	4.0-10.0	6.6-8.4	0-1	---	0-2	0-5
	1-10	40-50	30.0-40.0	6.6-8.4	1-5	---	0-2	0-5
	10-60	5-8	4.0-7.0	7.9-9.6	5-10	---	0-4	1-12
Malpais-----	0-3	5-15	3.0-10.0	6.6-8.4	---	---	0-4	0-12
	3-15	10-18	6.0-12.0	6.6-8.4	0-1	---	0-4	0-12
	15-60	10-18	6.0-12.0	7.9-9.0	0-5	---	0-4	5-30
580:								
Welch-----	0-24	15-20	25.0-35.0	6.1-7.3	---	---	---	---
	24-60	27-35	20.0-40.0	6.1-7.8	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
590:								
Rebel-----	0-11	8-15	10.0-27.0	6.6-7.8	0-1	---	0-4	0-5
	11-60	10-18	8.0-20.0	7.4-9.0	1-10	---	0-4	1-12
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
Yody-----	0-7	5-10	4.0-10.0	7.9-8.4	---	---	0-2	0-5
	7-16	20-35	13.0-23.0	7.9-8.4	1-5	---	2-4	1-12
	16-30	5-10	3.0-7.0	7.9-9.0	5-10	---	2-4	1-12
	30-60	---	---	---	---	---	---	---
591:								
Rebel-----	0-11	8-15	10.0-27.0	6.6-7.8	0-1	---	0-4	0-5
	11-60	10-18	8.0-20.0	7.4-9.0	1-10	---	0-4	1-12
592:								
Rebel-----	0-11	8-15	10.0-27.0	6.6-7.8	0-1	---	0-4	0-5
	11-60	10-18	8.0-20.0	7.4-9.0	1-10	---	0-4	1-12
Wholan-----	0-6	5-15	3.0-10.0	7.4-9.0	---	---	0-4	0-12
	6-45	5-15	3.0-10.0	7.4-9.6	5-15	---	4-16	5-12
	45-60	2-10	1.0-7.0	7.4-9.6	5-15	---	8-16	0-12
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
600:								
Hooten-----	0-1	0-5	0.0-4.0	8.5-9.6	0-1	---	4-8	1-12
	1-6	25-35	15.0-22.0	8.5-9.6	1-5	---	16-32	13-45
	6-12	---	---	---	---	---	---	---
	12-19	0-5	0.0-4.0	8.5-9.0	0-5	---	0-8	13-30
	19-60	5-15	3.0-10.0	8.5-9.0	0-5	0-1	4-32	13-30
Bango-----	0-2	5-12	3.0-8.0	7.9-9.0	1-5	---	4-8	5-12
	2-12	20-30	12.0-19.0	7.9-9.0	1-5	---	4-8	5-12
	12-60	18-25	11.0-16.0	7.9-9.0	5-10	1-2	4-16	13-30
Isolde-----	0-6	0-5	0.0-5.0	6.6-8.4	---	---	4-8	0-12
	6-60	0-5	0.0-5.0	6.6-8.4	0-10	---	0-4	0-12
610:								
Barnmot-----	0-2	40-50	35.0-45.0	7.9-8.4	0-3	---	0-2	1-5
	2-60	35-55	30.0-50.0	7.9-9.0	0-3	---	0-8	1-12
Bluewing-----	0-7	3-8	1.0-7.0	7.9-9.0	0-5	---	0-2	0-5
	7-60	3-8	1.0-7.0	7.9-9.0	5-10	---	0-4	0-5
Badland-----	0-6	35-70	20.0-40.0	7.4-9.6	1-5	1-10	0-32	0-99
	6-60	35-70	20.0-40.0	7.4-9.6	1-10	1-15	0-32	0-99
620:								
Findout-----	0-3	12-18	8.0-13.0	7.9-9.0	20-40	---	0-2	0-5
	3-8	25-35	16.0-23.0	7.9-9.0	20-40	---	0-2	0-5
	8-14	18-27	11.0-17.0	7.9-9.0	20-40	---	0-2	0-5
	14-18	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
620 (con.): Uripnes-----	0-4	10-18	6.0-12.0	6.1-7.8	0-1	---	---	---
	4-21	---	---	---	---	---	---	---
	21-25	---	---	---	---	---	---	---
Singatse-----	0-4	7-15	5.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
621: Rock Outcrop.								
Findout-----	0-3	12-18	8.0-13.0	7.9-9.0	20-40	---	0-2	0-5
	3-8	25-35	16.0-23.0	7.9-9.0	20-40	---	0-2	0-5
	8-14	18-27	11.0-17.0	7.9-9.0	20-40	---	0-2	0-5
	14-18	---	---	---	---	---	---	---
Izod-----	0-4	18-25	13.0-19.0	7.4-8.4	40-50	---	0-2	---
	4-8	18-25	11.0-17.0	7.4-8.4	40-50	---	0-2	---
	8-12	---	---	---	---	---	---	---
622: Rock Outcrop.								
Findout-----	0-3	12-18	8.0-13.0	7.9-9.0	20-40	---	0-2	0-5
	3-8	25-35	16.0-23.0	7.9-9.0	20-40	---	0-2	0-5
	8-14	18-27	11.0-17.0	7.9-9.0	20-40	---	0-2	0-5
	14-18	---	---	---	---	---	---	---
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
640: Mazuma-----	0-5	5-15	3.0-9.0	8.5-9.6	1-5	---	8-16	13-30
	5-25	5-15	3.0-9.0	8.5-9.6	5-10	0-1	8-32	13-30
	25-60	5-15	3.0-9.0	7.9-9.6	5-10	0-1	2-32	13-30
Bango-----	0-2	5-12	3.0-8.0	7.9-9.0	1-5	---	4-8	5-12
	2-12	20-30	12.0-19.0	7.9-9.0	1-5	---	4-8	5-12
	12-60	18-25	11.0-16.0	7.9-9.0	5-10	1-2	4-16	13-30
643: Mazuma-----	0-5	5-15	3.0-9.0	8.5-9.6	1-5	---	8-16	13-30
	5-25	5-15	3.0-9.0	8.5-9.6	5-10	0-1	8-32	13-30
	25-60	5-15	3.0-9.0	7.9-9.6	5-10	0-1	2-32	13-30
Bluewing-----	0-5	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	5-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
644: Mazuma-----	0-5	5-15	3.0-9.0	8.5-9.6	1-5	---	8-16	13-30
	5-25	5-15	3.0-9.0	8.5-9.6	5-10	0-1	8-32	13-30
	25-60	5-15	3.0-9.0	7.9-9.6	5-10	0-1	2-32	13-30
Toulon-----	0-2	10-12	5.0-10.0	7.9-9.0	1-5	0-2	2-4	0-12
	2-16	12-15	5.0-10.0	7.9-9.0	1-5	0-2	2-4	0-12
	16-60	0-3	0.0-3.0	7.9-9.0	1-5	0-2	2-4	0-12



TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
644 (con.): Chuckles-----	0-4	18-27	12.0-18.0	7.9-9.0	1-5	---	16-32	13-30
	4-17	18-27	12.0-18.0	8.5-9.6	5-10	---	16-32	45-90
	17-60	20-35	12.0-22.0	7.9-9.6	1-15	0-1	16-32	45-90
645: Mazuma-----	0-9	10-14	6.0-10.0	7.9-9.6	1-5	---	0-4	1-5
	9-60	5-15	3.0-9.0	7.9-9.6	1-10	---	4-16	13-45
650: Rock Outcrop.								
Labou-----	0-4	5-10	3.0-7.0	7.9-9.0	1-5	---	8-32	13-30
	4-11	35-45	21.0-28.0	8.5-9.0	5-10	---	8-32	13-45
	11-15	---	---	---	---	---	---	---
660: Loomer-----	0-7	15-25	10.0-25.0	6.6-7.8	---	---	---	---
	7-17	35-50	20.0-40.0	6.6-7.8	---	---	---	---
	17-21	---	---	---	---	---	---	---
Duco-----	0-4	10-20	10.0-20.0	6.1-7.8	---	---	---	---
	4-11	27-35	20.0-30.0	6.1-7.8	---	---	---	---
	11-15	---	---	---	---	---	---	---
662: Loomer-----	0-7	15-25	10.0-25.0	6.6-7.8	---	---	---	---
	7-17	35-50	20.0-40.0	6.6-7.8	---	---	---	---
	17-21	---	---	---	---	---	---	---
Bombadil-----	0-5	12-20	9.0-16.0	6.6-7.8	---	---	---	---
	5-8	18-27	13.0-20.0	6.6-7.8	---	---	---	---
	8-12	25-35	16.0-23.0	6.6-7.8	0-1	---	---	---
	12-16	---	---	---	---	---	---	---
Old Camp-----	0-3	8-20	7.0-16.0	6.6-7.8	---	---	---	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
670: Celeton-----	0-2	8-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.6	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	7.9-9.6	5-10	---	8-16	31-45
Bedwyr-----	0-2	18-27	12.0-18.0	7.4-9.0	---	---	0-4	5-12
	2-10	45-55	27.0-34.0	8.5-9.0	1-5	---	2-8	13-30
	10-13	45-60	27.0-37.0	7.9-9.0	1-5	0-1	8-16	5-30
	13-23	---	---	---	---	---	---	---
671: Celeton-----	0-2	8-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
671 (con.):								
Bedwyr-----	0-2	18-27	12.0-18.0	7.4-9.0	---	---	0-4	5-12
	2-10	45-55	27.0-34.0	8.5-9.0	1-5	---	2-8	13-30
	10-13	45-60	27.0-37.0	7.9-9.0	1-5	0-1	8-16	5-30
	13-23	---	---	---	---	---	---	---
Watoopah-----	0-2	1-5	0.0-5.0	6.6-7.8	---	---	0-2	0-5
	2-16	10-18	5.0-15.0	6.6-7.8	---	---	0-2	0-5
	16-29	0-5	0.0-5.0	7.4-8.4	0-10	---	0-2	1-5
	29-60	0-5	0.0-5.0	7.9-9.0	5-15	---	0-4	1-12
672:								
Celeton-----	0-2	5-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---
Barnmot-----	0-2	40-50	35.0-45.0	7.9-8.4	0-3	---	0-2	1-5
	2-60	35-55	30.0-50.0	7.9-9.0	0-3	---	0-8	1-12
Chilper-----	0-2	5-10	3.0-7.0	7.9-8.4	0-5	---	0-2	1-5
	2-5	5-10	3.0-7.0	7.9-8.4	0-5	---	0-4	1-5
	5-25	35-50	21.0-31.0	7.9-9.0	5-10	1-10	16-32	31-45
	25-60	5-10	3.0-7.0	8.5-9.0	5-10	0-2	16-32	31-45
680:								
Bombadil-----	0-5	12-20	9.0-16.0	6.6-7.8	---	---	---	---
	5-8	18-27	13.0-20.0	6.6-7.8	---	---	---	---
	8-12	25-35	16.0-23.0	6.6-7.8	0-1	---	---	---
	12-16	---	---	---	---	---	---	---
Old Camp-----	0-3	8-20	7.0-16.0	6.6-7.8	---	---	---	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
691:								
Osobb-----	0-3	12-18	10.0-15.0	7.4-9.0	1-5	---	0-2	1-5
	3-17	12-18	10.0-15.0	7.9-9.6	5-10	---	2-4	1-5
	17-18	---	---	---	---	---	---	---
	18-22	---	---	---	---	---	---	---
Singatse-----	0-4	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
Pirouette-----	0-4	10-18	10.0-15.0	7.9-9.0	1-5	---	0-2	1-12
	4-11	28-35	20.0-30.0	7.9-9.0	0-5	0-1	2-8	13-30
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
700:								
Clan Alpine-----	0-10	18-24	10.0-25.0	6.6-7.3	---	---	---	---
	10-39	25-35	15.0-30.0	6.6-7.8	---	---	---	---
	39-43	---	---	---	---	---	---	---
Itca-----	0-4	15-27	11.0-22.0	6.6-7.8	---	---	---	---
	4-16	35-45	22.0-31.0	6.6-8.4	---	---	0-2	0-1
	16-20	---	---	---	---	---	---	---
Old Camp-----	0-3	8-20	7.0-16.0	6.6-7.8	---	---	---	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
710:								
Luning-----	0-3	3-10	1.0-7.0	7.4-9.0	1-10	---	0-2	1-5
	3-60	3-10	1.0-7.0	7.9-9.0	1-10	---	0-4	5-12
Izo-----	0-4	0-5	0.0-8.0	7.9-9.0	1-10	---	0-2	0-5
	4-60	0-5	0.0-8.0	7.9-9.0	5-20	---	0-4	0-5
730:								
Hooplite-----	0-4	12-20	8.0-16.0	7.4-8.4	0-1	---	0-4	---
	4-8	22-30	14.0-20.0	7.4-8.4	1-2	---	0-4	---
	8-18	---	---	---	---	---	---	---
Theon-----	0-3	10-20	6.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	1-12
	12-16	---	---	---	---	---	---	---
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	---	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
731:								
Hooplite-----	0-4	12-20	8.0-16.0	7.4-8.4	0-1	---	0-4	---
	4-8	22-30	14.0-20.0	7.4-8.4	1-2	---	0-4	---
	8-18	---	---	---	---	---	---	---
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	---	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Singatse-----	0-4	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
732:								
Hooplite-----	0-4	12-20	8.0-16.0	7.4-8.4	0-1	---	0-2	---
	4-9	22-30	14.0-20.0	7.4-8.4	1-2	---	0-4	---
	9-13	---	---	---	---	---	---	---
Old Camp-----	0-3	8-20	7.0-16.0	6.6-7.8	---	---	---	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Puett-----	0-3	5-10	4.0-9.0	7.9-9.0	1-5	---	0-2	---
	3-11	5-10	3.0-8.0	7.9-9.0	1-5	0-1	0-2	0-5
	11-20	---	---	---	---	---	---	---
733:								
Hooplite-----	0-4	12-20	8.0-16.0	7.4-8.4	0-1	---	0-4	---
	4-8	22-30	14.0-20.0	7.4-8.4	1-2	---	0-4	---
	8-18	---	---	---	---	---	---	---
Old Camp-----	0-3	8-20	7.0-16.0	6.6-7.8	---	---	---	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Jung-----	0-7	10-15	8.0-13.0	6.6-7.8	---	---	---	---
	7-15	35-45	28.0-37.0	7.9-9.0	0-2	---	0-2	---
	15-19	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
734:								
Hooplite-----	0-4	12-20	8.0-16.0	7.4-8.4	0-1	---	0-4	---
	4-8	22-30	14.0-20.0	7.4-8.4	1-2	---	0-4	---
	8-18	---	---	---	---	---	---	---
Theon-----	0-3	10-20	6.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	1-12
	12-16	---	---	---	---	---	---	---
Puett-----	0-3	5-10	4.0-9.0	7.9-9.0	1-5	---	0-2	---
	3-11	5-10	3.0-8.0	7.9-9.0	1-5	0-1	0-2	0-5
	11-20	---	---	---	---	---	---	---
735:								
Hooplite-----	0-4	12-20	8.0-16.0	7.4-8.4	0-1	---	0-4	---
	4-8	22-30	14.0-20.0	7.4-8.4	1-2	---	0-4	---
	8-18	---	---	---	---	---	---	---
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Duco-----	0-4	10-20	10.0-20.0	6.1-7.8	---	---	---	---
	4-11	27-35	20.0-30.0	6.1-7.8	---	---	---	---
	11-15	---	---	---	---	---	---	---
740:								
Packer-----	0-10	14-20	15.0-20.0	6.6-7.3	---	---	---	---
	10-16	20-30	15.0-25.0	6.6-7.3	---	---	---	---
	16-60	10-16	5.0-10.0	6.6-7.3	---	---	---	---
Layview-----	0-5	15-20	10.0-20.0	6.6-7.8	---	---	---	---
	5-13	22-35	15.0-25.0	6.6-7.8	---	---	---	---
	13-17	---	---	---	---	---	---	---
Hapgood-----	0-19	15-25	15.0-25.0	6.1-7.3	---	---	---	---
	19-30	18-27	15.0-20.0	6.1-7.3	---	---	---	---
	30-46	10-15	5.0-10.0	6.1-7.3	---	---	---	---
	46-52	---	---	---	---	---	---	---
741:								
Rock Outcrop.								
Packer-----	0-10	14-20	15.0-20.0	6.6-7.3	---	---	---	---
	10-16	20-30	15.0-25.0	6.6-7.3	---	---	---	---
	16-60	10-16	5.0-10.0	6.6-7.3	---	---	---	---
Hapgood-----	0-19	15-20	13.0-18.0	6.1-7.3	---	---	---	---
	19-46	18-27	12.0-20.0	6.1-7.3	---	---	---	---
	46-52	---	---	---	---	---	---	---
760:								
Burnborough-----	0-17	10-25	10.0-25.0	6.1-7.3	---	---	---	---
	17-60	18-35	15.0-30.0	6.1-7.3	---	---	---	---
Cleavage-----	0-7	15-25	15.0-25.0	6.6-7.8	---	---	---	---
	7-14	20-35	15.0-30.0	6.6-7.8	---	---	---	---
	14-18	---	---	---	---	---	---	---
Welch-----	0-24	30-35	45.0-55.0	6.1-7.3	---	---	---	---
	24-60	27-35	20.0-40.0	6.1-7.8	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
761:								
Burnborough-----	0-17	10-25	10.0-25.0	6.1-7.3	---	---	---	---
	17-60	18-35	15.0-30.0	6.1-7.3	---	---	---	---
Cleavage-----	0-7	15-25	15.0-25.0	6.6-7.8	---	---	---	---
	7-14	20-35	15.0-30.0	6.6-7.8	---	---	---	---
	14-18	---	---	---	---	---	---	---
Reluctan-----	0-9	15-22	15.0-25.0	6.6-7.8	---	---	---	---
	9-25	25-35	15.0-30.0	6.6-7.8	---	---	---	---
	25-29	---	---	---	---	---	---	---
770:								
Chilper-----	0-2	5-10	3.0-7.0	7.9-8.4	0-5	---	0-2	1-5
	2-5	5-10	3.0-7.0	7.9-8.4	0-5	---	0-4	1-5
	5-25	35-50	21.0-31.0	7.9-9.0	5-10	1-10	16-32	31-45
	25-60	5-10	3.0-7.0	8.5-9.0	5-10	0-2	16-32	31-45
Bundorf-----	0-2	15-27	10.0-20.0	7.9-9.0	1-5	---	0-2	1-5
	2-11	35-50	30.0-40.0	7.9-9.0	1-5	---	0-2	1-12
	11-14	35-50	30.0-40.0	8.5-9.6	5-10	0-1	0-2	5-12
	14-45	---	---	---	---	---	---	---
Trocken-----	0-3	5-15	3.0-10.0	7.4-9.0	0-1	---	0-2	5-12
	3-60	8-18	5.0-12.0	7.9-9.6	0-5	---	2-4	13-45
772:								
Chilper-----	0-2	5-10	3.0-7.0	7.9-8.4	0-5	---	0-2	1-5
	2-5	5-10	3.0-7.0	7.9-8.4	0-5	---	0-4	1-5
	5-25	35-50	21.0-31.0	7.9-9.0	5-10	1-10	16-32	31-45
	25-60	5-10	3.0-7.0	8.5-9.0	5-10	0-2	16-32	31-45
Trocken-----	0-3	5-15	3.0-10.0	6.6-8.4	0-1	---	0-2	5-12
	3-60	8-18	5.0-12.0	7.9-9.0	0-5	---	2-4	13-45
Jerval-----	0-4	5-10	8.0-20.0	7.9-8.4	0-2	---	2-4	1-12
	4-18	27-35	20.0-30.0	7.9-9.0	1-5	0-3	8-16	13-30
	18-60	5-12	2.0-10.0	7.9-9.0	1-10	1-5	8-16	13-30
790:								
Jacratz-----	0-2	25-35	15.0-30.0	7.9-9.0	---	---	---	---
	2-8	25-35	15.0-30.0	7.9-9.0	1-5	---	0-2	---
	8-12	---	---	---	---	---	---	---
Nayfan-----	0-3	18-25	13.0-19.0	7.4-8.4	1-3	---	0-2	0-1
	3-27	18-27	12.0-18.0	7.4-8.4	1-5	---	0-2	0-1
	27-31	---	---	---	---	---	---	---
800:								
Bedwyr-----	0-2	18-27	12.0-18.0	7.4-9.0	---	---	0-4	5-12
	2-10	45-55	27.0-34.0	8.5-9.0	1-5	---	2-8	13-30
	10-13	45-60	27.0-37.0	7.9-9.0	1-5	0-1	8-16	5-30
	13-23	---	---	---	---	---	---	---
Celeton-----	0-2	8-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
802:								
Bedwyr-----	0-2	18-27	12.0-18.0	7.4-9.0	---	---	0-4	5-12
	2-10	45-55	27.0-34.0	8.5-9.0	1-5	---	2-8	13-30
	10-13	45-60	27.0-37.0	7.9-9.0	1-5	0-1	8-16	5-30
	13-23	---	---	---	---	---	---	---
Bedzee-----	0-7	20-27	14.0-20.0	7.9-8.4	---	---	2-4	1-12
	7-17	40-60	24.0-37.0	7.9-9.0	10-20	---	4-8	1-12
	17-21	---	---	---	---	---	---	---
Jobpeak-----	0-8	10-18	7.0-16.0	6.6-7.8	---	---	---	---
	8-18	---	---	---	---	---	---	---
820:								
Aboten-----	0-5	8-18	5.0-11.0	7.9-9.0	0-5	---	0-2	1-12
	5-19	25-35	15.0-22.0	7.9-9.0	1-5	---	2-4	13-90
	19-21	---	---	---	---	---	---	---
	21-60	3-8	1.0-6.0	7.9-9.0	1-10	0-5	4-16	31-45
Inmo-----	0-8	8-15	5.0-10.0	7.9-9.0	1-5	---	0-2	1-12
	8-40	1-6	0.0-3.0	7.9-9.0	1-5	---	2-4	1-12
	40-60	2-8	0.0-5.0	7.9-9.0	1-5	---	2-4	1-12
Bluewing-----	0-7	3-10	2.0-8.0	7.4-9.0	0-2	---	0-2	0-5
	7-60	3-10	2.0-8.0	7.4-9.0	1-5	---	0-4	1-12
830:								
Corral-----	0-3	15-25	10.0-20.0	6.6-7.3	---	---	---	---
	3-14	20-35	20.0-35.0	6.6-7.8	---	---	---	---
	14-18	---	---	---	---	---	---	---
Celeton-----	0-2	8-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---
Bedwyr-----	0-2	18-27	12.0-18.0	7.4-9.0	---	---	0-4	5-12
	2-10	45-55	27.0-34.0	8.5-9.0	1-5	---	2-8	13-30
	10-13	45-60	27.0-37.0	7.9-9.0	1-5	0-1	8-16	5-30
	13-23	---	---	---	---	---	---	---
840:								
Belate-----	0-12	10-18	8.0-17.0	6.6-7.3	---	---	---	---
	12-60	18-30	11.0-20.0	6.6-7.8	---	---	---	---
Roca-----	0-6	18-25	10.0-25.0	6.1-7.8	---	---	---	---
	6-25	35-50	20.0-40.0	6.6-8.4	0-10	---	0-2	0-5
	25-29	---	---	---	---	---	---	---
Cleavage-----	0-7	15-25	15.0-25.0	6.6-7.8	---	---	---	---
	7-14	20-35	15.0-30.0	6.6-7.8	---	---	---	---
	14-18	---	---	---	---	---	---	---
850:								
Walti-----	0-4	10-20	8.0-18.0	6.6-7.8	---	---	---	---
	4-10	27-35	18.0-25.0	6.6-7.8	---	---	---	---
	10-22	50-60	31.0-40.0	6.6-7.8	---	---	---	---
	22-26	---	---	---	---	---	---	---
Roca-----	0-6	18-25	10.0-25.0	6.1-7.8	---	---	---	---
	6-25	35-50	20.0-40.0	6.6-8.4	0-10	---	0-2	0-5
	25-29	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
850 (con.): Belate-----	0-12	10-18	8.0-17.0	6.6-7.3	---	---	---	---
	12-60	18-30	11.0-20.0	6.6-7.8	---	---	---	---
860: Teguro-----	0-6	10-18	8.0-17.0	6.1-7.3	---	---	---	---
	6-16	25-35	16.0-25.0	6.1-7.3	---	---	---	---
	16-20	---	---	---	---	---	---	---
Colbar-----	0-6	10-20	5.0-20.0	7.4-8.4	---	---	0-2	---
	6-16	22-35	15.0-30.0	7.4-8.4	---	---	0-2	---
	16-21	10-22	5.0-25.0	7.9-8.4	---	---	0-2	---
	21-31	---	---	---	---	---	---	---
Cleavage-----	0-7	15-25	15.0-25.0	6.6-7.8	---	---	---	---
	7-14	20-35	15.0-30.0	6.6-7.8	---	---	---	---
	14-18	---	---	---	---	---	---	---
870: Chill-----	0-4	5-10	4.0-10.0	6.6-7.8	---	---	---	---
	4-8	25-35	15.0-30.0	6.6-7.8	---	---	---	---
	8-22	---	---	---	---	---	---	---
Cleavage-----	0-4	15-25	10.0-20.0	6.6-7.8	---	---	---	---
	4-18	20-35	20.0-35.0	6.6-7.8	---	---	---	---
	18-22	---	---	---	---	---	---	---
880: Coppereid-----	0-2	10-18	10.0-20.0	7.9-9.0	5-15	---	0-2	---
	2-9	10-18	10.0-20.0	7.9-9.0	5-15	---	0-2	---
	9-13	---	---	---	---	---	---	---
Singatse-----	0-4	7-15	5.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
Findout-----	0-3	12-18	8.0-13.0	7.9-9.0	20-40	---	0-2	0-5
	3-8	25-35	16.0-23.0	7.9-9.0	20-40	---	0-2	0-5
	8-14	18-27	11.0-17.0	7.9-9.0	20-40	---	0-2	0-5
	14-18	---	---	---	---	---	---	---
900: Playas-----	0-6	27-40	24.0-35.0	8.5-9.6	1-5	1-5	16-32	46-90
	6-60	35-70	30.0-60.0	8.5-9.6	1-10	1-10	16-32	46-90
901: Dune Land-----	0-6	0-1	0.0-1.0	7.4-8.4	---	---	---	---
	6-60	0-1	0.0-1.0	7.4-8.4	---	---	---	---
Isolde-----	0-6	0-5	1.0-5.0	6.6-8.4	0-1	---	---	0-5
	6-60	0-5	1.0-5.0	6.6-8.4	0-3	0-1	0-2	0-5
902: Badland-----	0-6	35-70	20.0-40.0	7.4-9.6	1-5	1-10	0-32	0-99
	6-60	35-70	20.0-40.0	7.4-9.6	1-10	1-15	0-32	0-99
903: Badland-----	0-6	35-70	20.0-40.0	7.4-9.6	1-5	1-10	0-32	0-99
	6-60	35-70	20.0-40.0	7.4-9.6	1-10	1-15	0-32	0-99

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
903 (con.):								
Rebel-----	0-11	8-15	10.0-27.0	6.6-7.8	0-1	---	0-4	0-5
	11-60	10-18	8.0-20.0	7.4-9.0	1-10	---	0-4	1-12
Yody-----	0-7	5-10	4.0-10.0	7.9-8.4	---	---	0-2	0-5
	7-16	20-35	13.0-23.0	7.9-8.4	1-5	---	2-4	1-12
	16-30	5-10	3.0-7.0	7.9-9.0	5-10	---	2-4	1-12
	30-60	---	---	---	---	---	---	---
910:								
Rock Outcrop.								
Theriot-----	0-4	8-14	5.0-10.0	7.9-9.6	15-40	---	0-2	0-12
	4-9	5-14	3.0-8.0	7.9-9.6	20-40	---	0-4	0-12
	9-13	---	---	---	---	---	---	---
Findout-----	0-3	12-18	8.0-13.0	7.9-9.0	20-40	---	0-2	0-5
	3-8	25-35	16.0-23.0	7.9-9.0	20-40	---	0-2	0-5
	8-14	18-27	11.0-17.0	7.9-9.0	20-40	---	0-2	0-5
	14-18	---	---	---	---	---	---	---
930:								
Layview-----	0-5	15-20	10.0-20.0	6.6-7.8	---	---	---	---
	5-13	22-35	15.0-25.0	6.6-7.8	---	---	---	---
	13-17	---	---	---	---	---	---	---
Packer-----	0-10	10-20	11.0-24.0	6.6-7.3	---	---	---	---
	10-16	20-30	16.0-28.0	6.6-7.3	---	---	---	---
	16-42	10-15	8.0-14.0	6.6-7.3	---	---	---	---
	42-46	---	---	---	---	---	---	---
Hapgood-----	0-19	15-25	13.0-23.0	6.6-7.3	---	---	---	---
	19-46	15-25	11.0-21.0	6.6-7.3	---	---	---	---
	46-52	15-25	10.0-17.0	6.6-7.3	---	---	---	---
940:								
Old Camp-----	0-3	10-20	8.0-16.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Old Camp-----	0-3	10-20	5.0-20.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Rubble Land----	0-60	---	---	---	---	---	---	---
960:								
Kolda-----	0-23	10-20	26.0-42.0	7.9-9.6	1-10	---	0-2	0-12
	23-34	20-27	18.0-28.0	7.9-9.6	5-15	---	0-2	0-12
	34-58	40-50	24.0-32.0	8.5-9.6	5-15	---	4-8	5-12
	58-65	40-50	24.0-30.0	8.5-9.6	10-40	---	4-8	5-12
Umberland-----	0-10	35-40	22.0-26.0	9.1-9.6	10-25	---	16-32	46-90
	10-60	35-50	22.0-32.0	8.5-9.6	10-25	1-5	4-32	46-90
970:								
Rock Outcrop.								
Jobpeak-----	0-8	10-18	7.0-16.0	6.6-7.8	---	---	---	---
	8-18	---	---	---	---	---	---	---



TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
970 (con.): Teguro-----	0-6	10-18	8.0-17.0	6.1-7.3	---	---	---	---
	6-16	25-35	16.0-25.0	6.1-7.3	---	---	---	---
	16-20	---	---	---	---	---	---	---
980: Madeline-----	0-4	20-27	16.0-22.0	6.1-7.8	---	---	---	---
	4-12	25-40	17.0-28.0	6.1-7.8	---	---	---	---
	12-17	40-60	24.0-40.0	6.1-7.8	---	---	---	---
	17-21	---	---	---	---	---	---	---
Millerlux-----	0-6	18-27	13.0-22.0	6.6-8.4	---	---	---	---
	6-14	40-60	25.0-38.0	6.6-8.4	0-1	---	0-2	0-5
	14-19	35-50	22.0-32.0	7.9-9.0	5-10	---	0-2	0-5
	19-23	---	---	---	---	---	---	---
990: Millerlux-----	0-6	18-27	13.0-22.0	6.6-8.4	---	---	---	---
	6-14	40-60	25.0-38.0	6.6-8.4	0-1	---	0-2	0-5
	14-19	35-50	22.0-32.0	7.9-9.0	5-10	---	0-2	0-5
	19-23	---	---	---	---	---	---	---
Ninemile-----	0-7	15-25	20.0-28.0	6.1-7.3	---	---	---	---
	7-15	40-60	38.0-54.0	6.1-7.8	---	---	---	---
	15-19	---	---	---	---	---	---	---
Madeline-----	0-4	20-27	16.0-22.0	6.1-7.8	---	---	---	---
	4-12	25-40	17.0-28.0	6.1-7.8	---	---	---	---
	12-17	40-60	24.0-40.0	6.1-7.8	---	---	---	---
	17-21	---	---	---	---	---	---	---
1000: Stumble-----	0-4	3-10	2.0-8.0	6.6-8.4	---	---	0-2	0-5
	4-20	3-10	2.0-8.0	7.9-8.4	1-5	---	0-4	0-5
	20-60	3-10	2.0-8.0	7.9-9.0	1-5	---	0-8	0-5
1010: Downeyville----	0-3	8-18	5.0-15.0	7.9-8.4	0-5	---	0-2	0-5
	3-9	18-27	10.0-25.0	7.9-9.0	0-10	---	0-2	0-5
	9-13	---	---	---	---	---	---	---
Stewval-----	0-3	12-18	5.0-13.0	7.4-8.4	1-5	---	---	0-2
	3-8	24-30	12.0-20.0	7.4-8.4	1-5	---	---	0-2
	8-12	---	---	---	---	---	---	---
Blacktop-----	0-5	10-18	5.0-10.0	7.4-8.4	---	---	0-4	---
	5-9	---	---	---	---	---	---	---
1011: Downeyville----	0-3	8-18	5.0-15.0	7.9-8.4	0-5	---	0-2	0-5
	3-9	18-27	10.0-25.0	7.9-9.0	0-10	---	0-2	0-5
	9-13	---	---	---	---	---	---	---
Blacktop-----	0-5	10-18	5.0-10.0	7.4-8.4	---	---	0-4	---
	5-9	---	---	---	---	---	---	---
1012: Downeyville----	0-3	12-18	10.0-20.0	7.9-8.4	0-5	---	0-2	0-5
	3-9	18-27	10.0-25.0	7.9-9.0	0-10	---	0-2	0-5
	9-13	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1012 (con.): Downeyville-----	0-3	12-18	10.0-20.0	7.9-8.4	0-5	---	0-2	0-5
	3-9	18-27	10.0-25.0	7.9-9.0	0-10	---	0-2	0-5
	9-13	---	---	---	---	---	---	---
Blacktop-----	0-5	10-18	5.0-10.0	7.4-8.4	---	---	0-4	---
	5-9	---	---	---	---	---	---	---
1013: Downeyville-----	0-3	8-18	5.0-15.0	7.9-8.4	0-5	---	0-2	0-5
	3-9	18-27	10.0-25.0	7.9-9.0	0-10	---	0-2	0-5
	9-13	---	---	---	---	---	---	---
Downeyville-----	0-3	8-18	5.0-15.0	7.9-8.4	0-5	---	0-2	0-5
	3-9	18-27	10.0-25.0	7.9-9.0	0-10	---	0-2	0-5
	9-13	---	---	---	---	---	---	---
Gabbvally-----	0-4	10-18	10.0-20.0	6.6-7.8	---	---	0-2	0-5
	4-13	18-27	15.0-25.0	6.6-7.8	---	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
1020: Unsel-----	0-5	12-18	10.0-15.0	7.9-9.0	0-15	---	0-2	0-12
	5-12	20-27	16.0-22.0	7.4-9.0	1-15	---	0-2	1-12
	12-35	10-25	5.0-20.0	8.5-9.0	10-20	---	4-8	1-12
	35-60	2-8	0.0-5.0	8.5-9.0	10-20	---	4-8	13-30
Annaw-----	0-4	5-12	5.0-10.0	7.9-9.0	1-5	---	0-2	0-12
	4-12	5-12	5.0-10.0	7.9-9.0	1-5	---	0-2	0-12
	12-60	0-6	0.0-5.0	7.9-9.0	10-20	---	0-4	0-12
Izo-----	0-4	0-5	0.0-8.0	7.9-9.0	1-10	---	0-2	0-5
	4-60	0-5	0.0-8.0	7.9-9.0	5-20	---	0-4	0-5
1023: Unsel-----	0-5	15-20	12.0-16.0	7.9-9.0	0-15	---	0-2	0-12
	5-12	20-27	16.0-22.0	7.4-9.0	1-15	---	0-2	1-12
	12-35	10-25	5.0-20.0	8.5-9.0	10-20	---	4-8	1-12
	35-60	2-8	0.0-5.0	8.5-9.0	10-20	---	4-8	13-30
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
1024: Unsel-----	0-5	12-18	10.0-15.0	7.9-9.0	0-15	---	0-2	0-12
	5-12	20-27	16.0-22.0	7.4-9.0	1-15	---	0-2	1-12
	12-35	10-25	5.0-20.0	8.5-9.0	10-20	---	4-8	1-12
	35-60	2-8	0.0-5.0	8.5-9.0	10-20	---	4-8	13-30
Desatoya-----	0-6	10-20	8.0-18.0	6.6-7.8	---	---	---	---
	6-15	35-45	28.0-38.0	7.4-8.4	0-2	---	---	---
	15-60	8-18	5.0-11.0	7.9-9.0	2-5	---	2-8	1-12
Roic-----	0-1	10-15	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	1-6	12-18	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	6-10	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1025:								
Unsel-----	0-5	15-20	12.0-16.0	7.9-9.0	0-15	---	0-2	0-12
	5-12	20-27	16.0-22.0	7.4-9.0	1-15	---	0-2	1-12
	12-35	10-25	5.0-20.0	8.5-9.0	10-20	---	4-8	1-12
	35-60	2-8	0.0-5.0	8.5-9.0	10-20	---	4-8	13-30
Desatoya-----	0-6	10-20	8.0-18.0	6.6-7.8	---	---	---	---
	6-15	35-45	28.0-38.0	7.4-8.4	0-2	---	---	---
	15-60	8-18	5.0-11.0	7.9-9.0	2-5	---	2-8	1-12
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
1026:								
Unsel-----	0-5	12-18	10.0-15.0	7.9-9.0	0-15	---	0-2	0-12
	5-12	20-27	16.0-22.0	7.4-9.0	1-15	---	0-2	1-12
	12-35	10-25	5.0-20.0	8.5-9.0	10-20	---	4-8	1-12
	35-60	2-8	0.0-5.0	8.5-9.0	10-20	---	4-8	13-30
Pineval-----	0-5	10-20	8.0-16.0	7.4-8.4	---	---	---	---
	5-17	25-35	15.0-21.0	7.4-8.4	0-1	---	---	---
	17-60	5-10	3.0-6.0	7.4-8.4	1-5	---	0-2	---
Defler-----	0-7	8-18	5.0-15.0	7.4-9.0	1-5	---	0-2	---
	7-44	8-18	5.0-15.0	7.4-9.0	5-10	---	0-4	---
	44-60	5-10	0.0-5.0	7.4-9.0	5-10	---	8-16	0-12
1027:								
Unsel-----	0-5	12-18	10.0-15.0	7.9-9.0	0-15	---	0-2	0-12
	5-12	20-27	16.0-22.0	7.4-9.0	1-15	---	0-2	1-12
	12-35	10-25	5.0-20.0	8.5-9.0	10-20	---	4-8	1-12
	35-60	2-8	0.0-5.0	8.5-9.0	10-20	---	4-8	13-30
Roic-----	0-1	10-15	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	1-6	12-18	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	6-10	---	---	---	---	---	---	---
Annaw-----	0-4	3-6	2.0-5.0	7.9-9.0	1-5	---	0-2	0-12
	4-12	5-12	5.0-10.0	7.9-9.0	1-5	---	0-2	0-12
	12-60	0-6	0.0-5.0	7.9-9.0	10-20	---	0-4	0-12
1030:								
Goldyke-----	0-1	10-15	5.0-10.0	7.9-8.4	1-5	---	0-2	0-2
	1-4	12-18	8.0-15.0	7.9-8.4	1-5	---	0-2	0-2
	4-21	---	---	---	---	---	---	---
	21-25	---	---	---	---	---	---	---
Blacktop-----	0-5	10-18	5.0-10.0	7.4-8.4	---	---	0-4	---
	5-9	---	---	---	---	---	---	---
Koyen-----	0-4	5-15	3.0-15.0	7.9-9.0	---	---	0-2	0-5
	4-16	10-18	5.0-15.0	7.9-9.0	0-15	---	0-2	0-5
	16-38	10-18	5.0-15.0	7.9-9.0	10-30	---	0-4	1-12
	38-60	0-10	0.0-8.0	7.9-9.0	10-25	0-1	0-4	1-12
1040:								
Terlco-----	0-5	10-15	6.0-10.0	8.5-9.0	5-20	---	0-2	1-12
	5-13	18-35	11.0-22.0	8.5-9.6	5-20	---	2-8	13-30
	13-19	8-15	5.0-10.0	8.5-9.6	15-30	---	2-8	31-45
	19-60	3-10	2.0-7.0	8.5-9.6	15-30	---	2-8	31-45

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1040 (con.):								
Annaw-----	0-4	3-6	2.0-5.0	7.9-9.0	1-5	---	0-2	0-12
	4-12	5-12	5.0-10.0	7.9-9.0	1-5	---	0-2	0-12
	12-60	0-6	0.0-5.0	7.9-9.0	10-20	---	0-4	0-12
Izo-----	0-4	0-5	0.0-8.0	7.9-9.0	1-10	---	0-2	0-5
	4-60	0-5	0.0-8.0	7.9-9.0	5-20	---	0-4	0-5
1050:								
Rock Outcrop.								
Ceejay-----	0-4	15-25	11.0-19.0	6.6-8.4	---	---	0-2	0-1
	4-16	35-45	21.0-28.0	6.6-8.4	0-1	---	0-4	0-5
	16-20	---	---	---	---	---	---	---
Olac-----	0-3	10-20	7.0-16.0	6.1-7.8	---	---	---	---
	3-13	23-30	15.0-20.0	6.1-7.8	---	---	---	---
	13-17	---	---	---	---	---	---	---
1061:								
Olac-----	0-3	15-22	11.0-17.0	6.1-7.8	---	---	---	---
	3-13	23-30	15.0-20.0	6.1-7.8	---	---	---	---
	13-17	---	---	---	---	---	---	---
Theon-----	0-3	12-20	7.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-12	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	0-12
	12-16	---	---	---	---	---	---	---
Pirouette-----	0-4	10-18	10.0-15.0	7.9-9.0	1-5	---	0-2	1-12
	4-11	28-35	20.0-30.0	7.9-9.0	0-5	0-1	2-8	13-30
	11-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
1062:								
Olac-----	0-3	15-22	11.0-17.0	6.1-7.8	---	---	---	---
	3-13	23-30	15.0-20.0	6.1-7.8	---	---	---	---
	13-17	---	---	---	---	---	---	---
Old Camp-----	0-3	5-15	3.0-15.0	6.6-7.8	---	---	0-2	0-5
	3-13	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	13-17	---	---	---	---	---	---	---
Ceejay-----	0-4	15-25	11.0-19.0	6.6-8.4	---	---	0-2	0-1
	4-16	35-45	21.0-28.0	6.6-8.4	0-1	---	0-4	0-5
	16-20	---	---	---	---	---	---	---
1071:								
Ganaflan-----	0-5	10-18	5.0-15.0	7.9-9.0	5-15	---	8-16	13-45
	5-21	10-18	5.0-15.0	7.9-9.6	5-15	---	8-16	13-45
	21-32	---	---	---	---	---	---	---
	32-60	2-10	2.0-5.0	7.9-9.6	5-10	---	0-4	0-12
Bluewing-----	0-5	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	5-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
Trocken-----	0-3	8-18	5.0-12.0	7.9-9.0	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
1090:								
Umberland-----	0-10	35-40	22.0-26.0	9.1-9.6	10-25	---	16-32	46-90
	10-60	35-50	22.0-32.0	8.5-9.6	10-25	1-5	4-16	46-90

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1090 (con.): Isolde-----	0-6 6-60	0-5 0-5	0.0-5.0 0.0-5.0	6.6-8.4 6.6-8.4	--- 0-10	--- ---	4-8 0-4	0-12 0-12
1100: Theon-----	0-3 3-12 12-16	12-18 25-35 ---	7.0-12.0 15.0-22.0 ---	6.6-8.4 6.6-9.0 ---	0-1 0-1 ---	--- --- ---	0-2 0-2 ---	0-12 0-12 ---
Olac-----	0-3 3-13 13-17	10-20 23-30 ---	7.0-16.0 15.0-20.0 ---	6.1-7.8 6.1-7.8 ---	--- --- ---	--- --- ---	--- --- ---	--- --- ---
1101: Theon-----	0-3 3-12 12-16	12-20 25-35 ---	7.0-13.0 15.0-22.0 ---	6.6-8.4 6.6-9.0 ---	0-1 0-1 ---	--- --- ---	0-2 0-2 ---	0-12 0-12 ---
Theon-----	0-3 3-12 12-16	12-20 25-35 ---	7.0-13.0 15.0-22.0 ---	6.6-8.4 6.6-9.0 ---	0-1 0-1 ---	--- --- ---	0-2 0-2 ---	0-12 0-12 ---
1102: Theon-----	0-3 3-12 12-16	12-18 25-35 ---	7.0-12.0 15.0-22.0 ---	6.6-8.4 6.6-9.0 ---	0-1 0-1 ---	--- --- ---	0-2 0-2 ---	0-12 0-12 ---
Theon-----	0-3 3-12 12-16	10-20 25-35 ---	6.0-13.0 15.0-22.0 ---	6.6-8.4 6.6-9.0 ---	0-1 0-1 ---	--- --- ---	0-2 0-2 ---	0-12 1-12 ---
1104: Theon-----	0-3 3-12 12-16	12-18 25-35 ---	7.0-12.0 15.0-22.0 ---	6.6-8.4 6.6-9.0 ---	0-1 0-1 ---	--- --- ---	0-2 0-2 ---	0-12 0-12 ---
Roic-----	0-1 1-6 6-10	10-15 12-18 ---	5.0-15.0 5.0-15.0 ---	7.9-9.0 7.9-9.0 ---	0-10 0-10 ---	--- --- ---	0-2 0-2 ---	0-5 0-5 ---
Singatse-----	0-4 4-10 10-14	5-15 5-15 ---	4.0-12.0 4.0-12.0 ---	7.9-9.0 7.9-9.0 ---	1-10 1-10 ---	--- --- ---	0-2 0-2 ---	0-5 0-12 ---
1120: Patna-----	0-7 7-35 35-50 50-60	3-10 10-18 0-5 0-5	2.0-8.0 5.0-15.0 0.0-3.0 0.0-3.0	6.6-7.8 6.6-7.8 7.4-8.4 7.4-8.4	--- --- 1-5 1-5	--- --- --- ---	--- --- 0-2 0-2	--- --- --- 0-2
Hawsley-----	0-10 10-22 22-60	0-5 0-5 0-5	1.0-5.0 1.0-5.0 1.0-5.0	6.6-8.4 7.4-9.0 7.4-9.0	--- 1-5 1-5	--- --- ---	--- 0-2 0-2	--- 1-5 2-9
Juva-----	0-6 6-60	5-15 5-15	4.0-13.0 4.0-11.0	7.9-9.0 7.9-9.0	0-5 1-10	--- ---	0-2 0-4	1-12 13-30

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1121: Patna-----	0-7	3-10	2.0-8.0	6.6-7.8	---	---	---	---
	7-35	10-18	5.0-15.0	6.6-7.8	---	---	---	---
	35-50	0-5	0.0-3.0	7.4-8.4	1-5	---	0-2	---
	50-60	0-5	0.0-3.0	7.4-8.4	1-5	---	0-2	0-2
1130: Malpais-----	0-3	5-15	3.0-10.0	6.6-8.4	---	---	0-4	0-12
	3-15	10-18	6.0-12.0	6.6-8.4	0-1	---	0-4	0-12
	15-60	10-18	6.0-12.0	7.9-9.0	0-5	---	0-4	5-30
Malpais-----	0-3	5-15	4.0-12.0	6.6-7.3	---	---	---	---
	3-15	10-18	7.0-14.0	6.6-8.4	0-1	---	0-2	0-5
	15-60	10-18	7.0-14.0	7.9-9.0	1-5	---	0-4	1-12
1140: Roic-----	0-1	8-12	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	1-6	12-18	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	6-10	---	---	---	---	---	---	---
Biddleman-----	0-3	8-15	5.0-10.0	7.9-9.0	1-5	---	2-4	1-12
	3-10	20-30	15.0-25.0	7.9-9.0	1-5	0-1	0-8	13-30
	10-60	2-10	1.0-8.0	7.9-9.0	5-10	0-1	0-8	1-12
Hooten-----	0-1	0-5	0.0-4.0	8.5-9.6	0-1	---	4-8	1-12
	1-6	25-35	15.0-22.0	8.5-9.6	1-5	---	16-32	13-45
	6-12	---	---	---	---	---	---	---
	12-19	0-5	0.0-4.0	8.5-9.0	0-5	---	0-8	13-30
	19-60	5-15	3.0-10.0	8.5-9.0	0-5	0-1	4-32	13-30
1142: Roic-----	0-1	8-12	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	1-6	12-18	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	6-10	---	---	---	---	---	---	---
Mazuma-----	0-9	8-12	5.0-8.0	7.9-9.0	1-5	---	0-4	1-5
	9-60	5-15	3.0-9.0	7.9-9.6	1-10	---	4-16	13-45
Celeton-----	0-2	8-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---
1143: Roic-----	0-1	8-12	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	1-6	12-18	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	6-10	---	---	---	---	---	---	---
Trocken-----	0-3	8-18	5.0-12.0	7.4-9.0	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
Celeton-----	0-2	8-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	2-7	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	7-14	---	---	---	---	---	---	---
1144: Roic-----	0-1	8-12	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	1-6	12-18	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	6-10	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1144 (con.): Singatse-----	0-4	5-15	3.0-10.0	7.9-9.0	1-10	---	0-2	0-2
	4-10	5-15	3.0-10.0	7.9-9.0	1-10	---	0-2	0-2
	10-14	---	---	---	---	---	---	---
Celeton-----	0-3	8-15	5.0-10.0	7.4-9.0	1-5	---	0-4	0-2
	3-11	5-15	5.0-10.0	7.4-9.0	1-5	---	0-2	0-2
	11-15	---	---	---	---	---	---	---
1145: Roic-----	0-1	10-15	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	1-6	12-18	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	6-10	---	---	---	---	---	---	---
Patna-----	0-7	3-10	2.0-8.0	6.6-7.8	---	---	---	---
	7-35	10-18	5.0-15.0	6.6-7.8	---	---	---	---
	35-50	0-5	0.0-3.0	7.4-8.4	1-5	---	0-2	---
	50-60	0-5	0.0-3.0	7.4-8.4	1-5	---	0-2	0-2
1150: Phing-----	0-5	10-20	10.0-20.0	6.6-7.8	---	---	---	---
	5-35	45-60	35.0-50.0	6.6-8.4	---	---	---	0-5
	35-60	25-45	20.0-35.0	7.4-8.4	0-1	---	0-2	0-5
Buffaran-----	0-7	20-27	16.0-24.0	6.6-7.8	---	---	---	---
	7-15	35-50	28.0-42.0	6.6-8.4	0-1	---	0-4	---
	15-60	---	---	---	---	---	---	---
1160: Sojur-----	0-7	18-25	10.0-20.0	7.9-9.0	1-10	---	0-2	1-12
	7-11	---	---	---	---	---	---	---
Singatse-----	0-4	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-5
	4-10	5-15	4.0-12.0	7.9-9.0	1-10	---	0-2	0-12
	10-14	---	---	---	---	---	---	---
1171: Tocan-----	0-4	8-15	6.0-11.0	6.6-8.4	---	---	0-4	0-12
	4-16	20-28	12.0-18.0	6.6-8.4	---	---	0-4	0-12
	16-60	6-10	4.0-7.0	7.9-9.0	0-5	0-1	0-4	1-12
Aboten-----	0-5	8-18	5.0-11.0	7.9-9.0	0-5	---	0-2	1-12
	5-13	25-35	15.0-22.0	7.9-9.0	1-5	---	2-4	13-90
	13-21	---	---	---	---	---	---	---
	21-60	3-8	1.0-6.0	7.9-9.0	1-10	0-5	4-16	31-45
1180: Jerval-----	0-4	5-10	8.0-20.0	7.9-8.4	0-2	---	2-4	1-12
	4-18	27-35	20.0-30.0	7.9-9.0	1-5	0-3	8-16	13-30
	18-60	5-12	2.0-10.0	7.9-9.0	1-10	1-5	8-16	13-30
Trocken-----	0-3	8-18	5.0-12.0	8.5-9.6	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
1200: Arclay-----	0-4	5-12	5.0-11.0	6.6-7.8	---	---	---	---
	4-16	25-35	17.0-25.0	6.6-7.8	---	---	---	---
	16-40	---	---	---	---	---	---	---
	40-44	---	---	---	---	---	---	---

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1210:								
Biga-----	0-3	4-12	2.0-8.0	7.4-8.4	---	---	0-2	0-12
	3-13	35-45	21.0-28.0	8.5-9.6	5-10	---	2-8	13-45
	13-60	2-10	1.0-7.0	7.9-9.6	5-10	---	2-8	13-45
Granshaw-----	0-3	4-10	0.0-5.0	7.9-9.0	---	---	0-2	---
	3-24	10-17	5.0-15.0	7.9-9.0	1-5	---	0-2	---
	24-60	2-8	0.0-5.0	7.9-9.6	5-15	---	0-2	---
Labkey-----	0-4	5-12	3.0-8.0	7.9-8.4	---	---	0-2	1-5
	4-12	5-12	3.0-8.0	7.9-9.0	---	---	0-2	1-12
	12-60	2-8	1.0-6.0	7.9-9.0	1-5	---	2-4	1-12
1211:								
Biga-----	0-3	4-12	2.0-8.0	7.4-8.4	---	---	0-2	0-12
	3-13	35-45	21.0-28.0	8.5-9.6	5-10	---	2-8	13-45
	13-60	2-10	1.0-7.0	7.9-9.6	5-10	---	2-8	13-45
1212:								
Biga-----	0-3	4-12	2.0-8.0	7.4-8.4	---	---	0-2	0-12
	3-13	35-45	21.0-28.0	8.5-9.6	5-10	---	2-8	13-45
	13-60	2-10	1.0-7.0	7.9-9.6	5-10	---	2-8	13-45
Roic-----	0-1	10-15	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	1-6	12-18	5.0-15.0	7.9-9.0	0-10	---	0-2	0-5
	6-10	---	---	---	---	---	---	---
Labkey-----	0-4	5-12	3.0-8.0	7.9-8.4	---	---	0-2	1-5
	4-12	5-12	3.0-8.0	7.9-9.0	---	---	0-2	1-12
	12-60	2-8	1.0-6.0	7.9-9.0	1-5	---	2-4	1-12
1220:								
Labkey-----	0-4	5-12	3.0-8.0	7.9-8.4	---	---	0-2	1-5
	4-12	5-12	3.0-8.0	7.9-9.0	---	---	0-2	1-12
	12-60	2-8	1.0-6.0	7.9-9.0	1-5	---	2-4	1-12
1230:								
Genegra-----	0-6	8-14	5.0-12.0	7.9-9.6	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	7.9-9.6	5-10	---	8-16	31-45
Bluewing-----	0-5	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	5-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
Dorper-----	0-2	8-15	4.0-10.0	7.9-9.0	0-5	---	0-2	1-12
	2-7	5-15	3.0-10.0	7.9-9.0	1-5	---	2-4	1-12
	7-17	35-45	21.0-28.0	7.9-9.0	1-10	0-1	2-8	13-45
	17-60	8-15	4.0-10.0	7.9-9.0	1-10	0-5	16-32	31-90
1231:								
Genegra-----	0-6	8-14	5.0-12.0	7.9-9.6	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	7.9-9.6	5-10	---	8-16	31-45
Trocken-----	0-3	5-18	3.0-12.0	8.5-9.6	0-1	---	0-2	5-12
	3-60	8-18	5.0-12.0	7.9-9.6	0-5	---	2-4	13-45
Bluewing-----	0-7	3-10	2.0-8.0	7.4-9.0	0-2	---	0-2	0-5
	7-60	3-10	2.0-8.0	7.4-9.0	1-5	---	0-4	1-12



TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1232:								
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.0	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	8.5-9.6	5-10	---	8-32	31-45
Rednik-----	0-5	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	5-16	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	16-21	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	21-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
Trocken-----	0-3	8-18	5.0-12.0	8.5-9.6	1-5	---	0-2	1-12
	3-60	8-18	5.0-12.0	7.9-9.6	1-5	0-1	2-4	5-12
1233:								
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.0	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.6	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	8.5-9.6	5-10	---	8-32	31-45
Buckaroo-----	0-4	8-15	5.0-10.0	8.5-9.6	0-2	---	0-4	5-12
	4-16	35-50	21.0-31.0	8.5-9.6	1-10	---	8-16	31-90
	16-60	8-18	5.0-12.0	8.5-9.6	5-15	---	8-16	31-90
Bluewing-----	0-7	3-10	2.0-8.0	7.4-9.0	0-2	---	0-2	0-5
	7-60	3-10	2.0-8.0	7.4-9.0	1-5	---	0-4	1-12
1280:								
Soar-----	0-2	12-20	7.0-14.0	6.6-7.8	---	---	---	---
	2-10	20-26	12.0-16.0	6.6-7.8	---	---	---	---
	10-24	---	---	---	---	---	---	---
	24-28	---	---	---	---	---	---	---
Arclay-----	0-4	5-12	5.0-11.0	6.6-7.8	---	---	---	---
	4-16	25-35	17.0-25.0	6.6-7.8	---	---	---	---
	16-40	---	---	---	---	---	---	---
	40-44	---	---	---	---	---	---	---
Soar-----	0-2	12-20	7.0-14.0	6.6-7.8	---	---	---	---
	2-10	20-26	12.0-16.0	6.6-7.8	---	---	---	---
	10-24	---	---	---	---	---	---	---
	24-28	---	---	---	---	---	---	---
1290:								
Slocave-----	0-1	6-14	4.0-10.0	7.9-8.4	1-5	---	0-2	---
	1-5	6-16	4.0-12.0	7.9-8.4	1-5	---	0-2	---
	5-22	---	---	---	---	---	---	---
	22-26	---	---	---	---	---	---	---
Vium-----	0-2	6-12	4.0-8.0	7.9-8.4	1-3	---	0-2	0-12
	2-8	10-18	6.0-12.0	7.9-8.4	1-5	---	0-2	0-12
	8-12	---	---	---	---	---	---	---
1300:								
Lovelock-----	0-10	15-27	25.0-50.0	7.9-8.4	1-5	---	0-2	1-12
	10-60	35-60	25.0-65.0	7.9-8.4	5-10	0-1	0-2	1-12
1301:								
Lovelock-----	0-10	15-27	25.0-50.0	7.9-9.0	5-10	---	16-32	13-30
	10-60	35-60	25.0-65.0	7.9-9.0	5-15	0-1	0-8	13-30

TABLE 14.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1320: Gardella-----	0-2	5-15	3.0-10.0	8.5-9.6	1-5	---	16-32	13-45
	2-9	3-8	1.0-5.0	8.5-9.6	1-5	---	4-16	13-30
	9-23	---	---	---	---	---	---	---
	23-60	40-50	24.0-31.0	8.5-9.6	1-5	0-1	16-32	13-30
1330: Parran-----	0-8	40-55	28.0-40.0	8.5-9.6	0-5	0-1	32-99	46-150
	8-22	35-55	25.0-40.0	8.5-9.6	0-5	1-3	32-99	46-150
	22-60	35-55	25.0-39.0	8.5-9.6	0-5	0-3	16-99	13-45
1331: Parran-----	0-8	40-55	28.0-40.0	8.5-9.6	0-5	0-1	32-99	46-150
	8-22	35-55	25.0-40.0	8.5-9.6	0-5	1-3	32-99	46-150
	22-60	35-55	25.0-39.0	8.5-9.6	0-5	0-3	16-99	13-45
Hawsley-----	0-10	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	10-22	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
	22-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	2-9
1332: Parran-----	0-8	27-40	19.0-29.0	8.5-9.6	0-5	0-1	32-99	46-150
	8-22	35-55	25.0-40.0	8.5-9.6	0-5	1-3	32-99	46-150
	22-60	35-55	25.0-39.0	8.5-9.6	0-5	0-3	16-99	13-45
Umberland-----	0-10	35-40	22.0-26.0	9.1-9.6	10-25	---	16-32	46-90
	10-60	35-50	22.0-32.0	8.5-9.6	10-25	1-5	4-32	46-90
1340: Inmo-----	0-8	3-8	0.0-5.0	7.9-9.0	1-5	---	0-2	1-12
	8-40	2-8	0.0-5.0	7.9-9.0	1-5	---	2-4	1-12
	40-60	5-10	0.0-8.0	7.9-9.6	1-5	---	2-4	1-12
Inmo-----	0-8	3-8	0.0-5.0	7.9-9.0	1-5	---	0-2	1-12
	8-40	1-6	0.0-3.0	7.9-9.0	1-5	---	2-4	1-12
	40-60	2-8	0.0-5.0	7.9-9.0	1-5	---	2-4	1-12

TABLE 15.--WATER FEATURES

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
100:									
Budihol-----	D	None	---	---	>6.0	---	---	---	---
Chill-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
102:									
Budihol-----	D	None	---	---	>6.0	---	---	---	---
Minneha-----	C	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
110:									
Blimmer-----	D	None	---	---	>6.0	---	---	---	---
Chill-----	D	None	---	---	>6.0	---	---	---	---
120:									
Nemico-----	D	None	---	---	>6.0	---	---	---	---
Mirkwood-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
130:									
Bedzee-----	D	None	---	---	>6.0	---	---	---	---
Loomer-----	D	None	---	---	>6.0	---	---	---	---
Bedwyr-----	D	None	---	---	>6.0	---	---	---	---
140:									
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
141:									
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Isolde-----	A	None	---	---	>6.0	---	---	---	---
142:									
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Appian-----	B	None	---	---	>6.0	---	---	---	---
Ruhe-----	D	None	---	---	>6.0	---	---	---	---
143:									
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Gamgee-----	C	None	---	---	>6.0	---	---	---	---
144:									
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Theon-----	D	None	---	---	>6.0	---	---	---	---
Pirouette-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
146: Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Juva-----	B	Occasional	---	Jun-Sep	>6.0	---	---	---	---
147: Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Celeton-----	D	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
150: Buckaroo-----	C	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	Rare	---	---	>6.0	---	---	---	---
152: Buckaroo-----	C	None	---	---	>6.0	---	---	---	---
Watoopah-----	B	None	---	---	>6.0	---	---	---	---
Rezave-----	D	None	---	---	>6.0	---	---	---	---
153: Buckaroo-----	C	None	---	---	>6.0	---	---	---	---
Rednik-----	B	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	Occasional	---	Jul-Sep	>6.0	---	---	---	---
154: Buckaroo-----	C	None	---	---	>6.0	---	---	---	---
Rednik-----	B	None	---	---	>6.0	---	---	---	---
Genegraf-----	B	None	---	---	>6.0	---	---	---	---
155: Buckaroo-----	C	None	---	---	>6.0	---	---	---	---
Genegraf-----	B	None	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
158: Buckaroo-----	C	None	---	---	>6.0	---	---	---	---
Celeton-----	D	None	---	---	>6.0	---	---	---	---
Wholan-----	B	Rare	---	---	>6.0	---	---	---	---
159: Buckaroo-----	C	None	---	---	>6.0	---	---	---	---
Genegraf-----	B	None	---	---	>6.0	---	---	---	---
160: Singatse-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
160 (con.): Rock Outcrop.									
161: Singatse-----	D	None	---	---	>6.0	---	---	---	---
Uripnes-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
162: Singatse-----	D	None	---	---	>6.0	---	---	---	---
Theon-----	D	None	---	---	>6.0	---	---	---	---
Rezave-----	D	None	---	---	>6.0	---	---	---	---
164: Singatse-----	D	None	---	---	>6.0	---	---	---	---
Loomer-----	D	None	---	---	>6.0	---	---	---	---
170: Isolde-----	A	None	---	---	>6.0	---	---	---	---
Dune Land-----	A	None	---	---	>6.0	---	---	---	---
Pirouette-----	D	None	---	---	>6.0	---	---	---	---
171: Isolde-----	A	None	---	---	>6.0	---	---	---	---
Parran-----	D	None	---	---	2.5-3.5	Apparent	Nov-Mar	---	---
Appian-----	B	None	---	---	5.0-6.0	Apparent	Apr-Sep	---	---
172: Isolde-----	A	None	---	---	>6.0	---	---	---	---
Pirouette-----	D	None	---	---	>6.0	---	---	---	---
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
173: Isolde-----	A	None	---	---	>6.0	---	---	---	---
174: Isolde-----	A	None	---	---	>6.0	---	---	---	---
Ragtown-----	C	Frequent	---	Nov-Jun	>6.0	---	---	---	---
180: Bluewing-----	A	Rare	---	---	>6.0	---	---	---	---
Inmo-----	A	Rare	---	---	>6.0	---	---	---	---
181: Bluewing-----	A	Occasional	---	Jul-Sep	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
184:									
Bluewing-----	A	Occasional	---	Jul-Sep	>6.0	---	---	---	---
Bluewing-----	A	Rare	---	---	>6.0	---	---	---	---
Pineval-----	B	Rare	---	---	>6.0	---	---	---	---
185:									
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
Toulon-----	B	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
186:									
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
190:									
Theon-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
191:									
Theon-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
192:									
Theon-----	D	None	---	---	>6.0	---	---	---	---
193:									
Theon-----	D	None	---	---	>6.0	---	---	---	---
Mirkwood-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
194:									
Theon-----	D	None	---	---	>6.0	---	---	---	---
Hooplite-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
199:									
Theon-----	D	None	---	---	>6.0	---	---	---	---
Olac-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
200:									
Pirouette-----	D	None	---	---	>6.0	---	---	---	---
Osobb-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
200 (con.): Rock Outcrop.									
201: Pirouette-----	D	None	---	---	>6.0	---	---	---	---
Osobb-----	D	None	---	---	>6.0	---	---	---	---
Celeton-----	D	None	---	---	>6.0	---	---	---	---
203: Pirouette-----	D	None	---	---	>6.0	---	---	---	---
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
204: Pirouette-----	D	None	---	---	>6.0	---	---	---	---
Osobb-----	D	None	---	---	>6.0	---	---	---	---
Isolde-----	A	None	---	---	>6.0	---	---	---	---
206: Pirouette-----	D	None	---	---	>6.0	---	---	---	---
Osobb-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
207: Pirouette-----	D	None	---	---	>6.0	---	---	---	---
Rezave-----	D	None	---	---	>6.0	---	---	---	---
Osobb-----	D	None	---	---	>6.0	---	---	---	---
208: Pirouette-----	D	None	---	---	>6.0	---	---	---	---
Theon-----	D	None	---	---	>6.0	---	---	---	---
Rubble Land----	A	None	---	---	>6.0	---	---	---	---
210: Biddleman-----	B	None	---	---	>6.0	---	---	---	---
Biddleman-----	B	None	---	---	>6.0	---	---	---	---
211: Biddleman-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
Biddleman-----	B	None	---	---	>6.0	---	---	---	---
213: Biddleman-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
214: Biddleman-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
Ruhe-----	D	None	---	---	>6.0	---	---	---	---
215: Biddleman-----	B	None	---	---	>6.0	---	---	---	---
Isolde-----	A	None	---	---	>6.0	---	---	---	---
216: Biddleman-----	B	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
220: Bango-----	B	None	---	---	>6.0	---	---	---	---
Stumble-----	A	None	---	---	>6.0	---	---	---	---
221: Bango-----	B	Rare	---	---	>6.0	---	---	---	---
Appian-----	B	None	---	---	>6.0	---	---	---	---
222: Bango-----	B	None	---	---	>6.0	---	---	---	---
Playas-----	D	None	---	---	-1.0-1.0	Apparent	Feb-Sep	Long	1.0
Chuckles-----	B	None	---	---	>6.0	---	---	---	---
230: Uripnes-----	D	None	---	---	>6.0	---	---	---	---
Budihol-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
231: Uripnes-----	D	None	---	---	>6.0	---	---	---	---
Budihol-----	D	None	---	---	>6.0	---	---	---	---
Chill-----	D	None	---	---	>6.0	---	---	---	---
232: Uripnes-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
240: Watoopah-----	B	None	---	---	>6.0	---	---	---	---
Genegraf-----	B	None	---	---	>6.0	---	---	---	---



TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
240 (con.): Buckaroo-----	C	None	---	---	>6.0	---	---	---	---
241: Watoopah-----	B	None	---	---	>6.0	---	---	---	---
Buckaroo-----	C	None	---	---	>6.0	---	---	---	---
Wholan-----	B	Rare	---	---	>6.0	---	---	---	---
250: Rezave-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
260: Appian-----	B	None	---	---	>6.0	---	---	---	---
Playas-----	D	Rare	---	---	-1.0-1.0	Apparent	Feb-Sep	Long	1.0
261: Appian-----	B	None	---	---	>6.0	---	---	---	---
262: Appian-----	B	None	---	---	>6.0	---	---	---	---
Juva-----	B	Occasional	---	Jun-Sep	>6.0	---	---	---	---
Bango-----	B	None	---	---	>6.0	---	---	---	---
270: Fubble-----	D	None	---	---	>6.0	---	---	---	---
Nicanor-----	D	None	---	---	>6.0	---	---	---	---
280: Trocken-----	B	Occasional	---	Nov-Aug	>6.0	---	---	---	---
Chuckles-----	B	None	---	---	>6.0	---	---	---	---
281: Trocken-----	B	None	---	---	>6.0	---	---	---	---
Ragtown-----	C	None	---	---	>6.0	---	---	---	---
283: Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
Bluewing-----	A	Occasional	---	Jul-Sep	>6.0	---	---	---	---
284: Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
290: Huxley-----	C	None	---	---	>6.0	---	---	---	---
300: Old Camp-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
300 (con.): Colbar-----	C	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
301: Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Mirkwood-----	D	None	---	---	>6.0	---	---	---	---
Nemico-----	D	None	---	---	>6.0	---	---	---	---
302: Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
304: Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Bombadil-----	D	None	---	---	>6.0	---	---	---	---
Loomer-----	D	None	---	---	>6.0	---	---	---	---
305: Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Colbar-----	C	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
307: Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Theon-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
308: Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Clanalpine-----	C	None	---	---	>6.0	---	---	---	---
Colbar-----	C	None	---	---	>6.0	---	---	---	---
309: Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Pickup-----	C	None	---	---	>6.0	---	---	---	---
Loomer-----	D	None	---	---	>6.0	---	---	---	---
310: Rednik-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
Bluewing-----	A	Rare	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
311:									
Rednik-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
Genegraf-----	B	None	---	---	>6.0	---	---	---	---
313:									
Rednik-----	B	None	---	---	>6.0	---	---	---	---
Ricert-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	None	---	---	>6.0	---	---	---	---
315:									
Rednik-----	B	None	---	---	>6.0	---	---	---	---
Genegraf-----	B	None	---	---	>6.0	---	---	---	---
Barnmot-----	D	None	---	---	>6.0	---	---	---	---
316:									
Rednik-----	B	None	---	---	>6.0	---	---	---	---
Rednik-----	B	None	---	---	>6.0	---	---	---	---
317:									
Rednik-----	B	None	---	---	>6.0	---	---	---	---
Cleaver-----	D	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
320:									
Jung-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
321:									
Jung-----	D	None	---	---	>6.0	---	---	---	---
Desatoya-----	C	None	---	---	>6.0	---	---	---	---
Roca-----	D	None	---	---	>6.0	---	---	---	---
322:									
Jung-----	D	None	---	---	>6.0	---	---	---	---
Puett-----	D	None	---	---	>6.0	---	---	---	---
Buffaran-----	D	None	---	---	>6.0	---	---	---	---
324:									
Jung-----	D	None	---	---	>6.0	---	---	---	---
Clan Alpine-----	C	None	---	---	>6.0	---	---	---	---
Colbar-----	C	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
325:									
Jung-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Clan Alpine-----	C	None	---	---	>6.0	---	---	---	---
330:									
Settlement-----	D	Rare	---	---	1.0-3.0	Apparent	Feb-May	---	---
Louderback-----	C	Rare	---	---	3.0-5.0	Apparent	Mar-Jun	---	---
Rustigate-----	C	Rare	---	---	3.0-5.0	Apparent	Dec-Jul	---	---
331:									
Settlement-----	D	Rare	---	---	1.0-3.0	Apparent	Feb-May	---	---
Chuckles-----	B	None	---	---	>6.0	---	---	---	---
Rustigate-----	C	Rare	---	---	3.0-5.0	Apparent	Dec-Jul	---	---
340:									
Slaw-----	C	Occasional	Brief	Dec-May	>6.0	---	---	---	---
Juva-----	B	Occasional	---	Jun-Sep	>6.0	---	---	---	---
Wholan-----	B	Occasional	---	Dec-Apr	>6.0	---	---	---	---
341:									
Slaw-----	C	Occasional	Brief	Dec-May	>6.0	---	---	---	---
Chuckles-----	B	None	---	---	>6.0	---	---	---	---
342:									
Slaw-----	C	Occasional	Brief	Dec-May	>6.0	---	---	---	---
Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Hessing-----	B	None	---	---	>6.0	---	---	---	---
343:									
Slaw-----	C	Occasional	Brief	Dec-May	>6.0	---	---	---	---
Trocken-----	B	Occasional	---	Nov-Aug	>6.0	---	---	---	---
Chuckles-----	B	None	---	---	>6.0	---	---	---	---
344:									
Slaw-----	C	Occasional	Brief	Dec-May	>6.0	---	---	---	---
Ragtown-----	C	None	---	---	>6.0	---	---	---	---
350:									
Ricert-----	B	None	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
351:									
Ricert-----	B	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
351 (con.):									
Chilper-----	D	None	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
352:									
Ricert-----	B	None	---	---	>6.0	---	---	---	---
Desatoya-----	C	None	---	---	>6.0	---	---	---	---
Pineval-----	B	Rare	---	---	>6.0	---	---	---	---
353:									
Ricert-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
Pineval-----	B	Rare	---	---	>6.0	---	---	---	---
358:									
Ricert-----	B	None	---	---	>6.0	---	---	---	---
Desatoya-----	C	None	---	---	>6.0	---	---	---	---
Trocken-----	B	None	---	---	>6.0	---	---	---	---
359:									
Ricert-----	B	None	---	---	>6.0	---	---	---	---
Celeton-----	D	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
360:									
Ricert-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	None	---	---	>6.0	---	---	---	---
Rebel-----	B	Rare	---	---	>6.0	---	---	---	---
370:									
Duco-----	D	None	---	---	>6.0	---	---	---	---
Clanalpine-----	C	None	---	---	>6.0	---	---	---	---
Jung-----	D	None	---	---	>6.0	---	---	---	---
371:									
Duco-----	D	None	---	---	>6.0	---	---	---	---
Clanalpine-----	C	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
373:									
Duco-----	D	None	---	---	>6.0	---	---	---	---
Itca-----	D	None	---	---	>6.0	---	---	---	---
Puett-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
380:									
Itca-----	D	None	---	---	>6.0	---	---	---	---
Clanalpine-----	C	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
381:									
Itca-----	D	None	---	---	>6.0	---	---	---	---
Reluctan-----	C	None	---	---	>6.0	---	---	---	---
Walti-----	D	None	---	---	>6.0	---	---	---	---
390:									
Defler-----	B	Rare	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
391:									
Defler-----	B	Rare	---	---	>6.0	---	---	---	---
Trocken-----	B	None	---	---	>6.0	---	---	---	---
400:									
Chuckles-----	B	None	---	---	>6.0	---	---	---	---
Playas-----	D	None	---	---	-1.0-1.0	Apparent	Feb-Sep	Long	1.0
401:									
Chuckles-----	B	None	---	---	>6.0	---	---	---	---
Bango-----	B	None	---	---	>6.0	---	---	---	---
402:									
Chuckles-----	B	None	---	---	>6.0	---	---	---	---
Playas-----	D	None	---	---	-1.0-1.0	Apparent	Feb-Sep	Long	1.0
Slaw-----	C	Occasional	Brief	Dec-May	>6.0	---	---	---	---
404:									
Chuckles-----	B	None	---	---	>6.0	---	---	---	---
Settlement-----	D	Rare	---	---	1.0-3.0	Apparent	Feb-May	---	---
Rebel-----	B	Rare	---	---	>6.0	---	---	---	---
410:									
Buffaran-----	D	None	---	---	>6.0	---	---	---	---
Desatoya-----	C	None	---	---	>6.0	---	---	---	---
411:									
Buffaran-----	D	None	---	---	>6.0	---	---	---	---
Rebel-----	B	Rare	---	---	>6.0	---	---	---	---
Puett-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
420:									
Trocken-----	B	None	---	---	>6.0	---	---	---	---
Hessing-----	B	None	---	---	>6.0	---	---	---	---
Dun Glen-----	B	Rare	---	---	>6.0	---	---	---	---
422:									
Trocken-----	B	None	---	---	>6.0	---	---	---	---
Hessing-----	B	None	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
423:									
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
Bluewing-----	A	Rare	---	---	>6.0	---	---	---	---
Trocken-----	B	Occasional	---	Nov-Aug	>6.0	---	---	---	---
425:									
Trocken-----	B	None	---	---	>6.0	---	---	---	---
Hessing-----	B	None	---	---	>6.0	---	---	---	---
Defler-----	B	Rare	---	---	>6.0	---	---	---	---
430:									
Kram-----	D	None	---	---	>6.0	---	---	---	---
Attella-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
432:									
Kram-----	D	None	---	---	>6.0	---	---	---	---
Findout-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
433:									
Kram-----	D	None	---	---	>6.0	---	---	---	---
Hopeka-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
440:									
Ravenswood-----	C	None	---	---	>6.0	---	---	---	---
Itca-----	D	None	---	---	>6.0	---	---	---	---
Walti-----	D	None	---	---	>6.0	---	---	---	---
450:									
Wholan-----	B	Occasional	---	Dec-Apr	>6.0	---	---	---	---
Wholan-----	B	Rare	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
450 (con.): Defler-----	B	Rare	---	---	>6.0	---	---	---	---
460: Juva-----	B	Occasional	---	Jun-Sep	>6.0	---	---	---	---
Wholan-----	B	Occasional	---	Dec-Apr	>6.0	---	---	---	---
Stumble-----	A	None	---	---	>6.0	---	---	---	---
470: Hessing-----	B	None	---	---	>6.0	---	---	---	---
Wholan-----	B	Occasional	---	Dec-Apr	>6.0	---	---	---	---
Dun Glen-----	B	Rare	---	---	>6.0	---	---	---	---
471: Hessing-----	B	None	---	---	>6.0	---	---	---	---
Dun Glen-----	B	Rare	---	---	>6.0	---	---	---	---
Bango-----	B	None	---	---	>6.0	---	---	---	---
480: Yody-----	C	None	---	---	>6.0	---	---	---	---
Buffaran-----	D	None	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
481: Yody-----	C	None	---	---	>6.0	---	---	---	---
Ricert-----	B	None	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
484: Yody-----	C	None	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
491: Pineval-----	B	None	---	---	>6.0	---	---	---	---
Rebel-----	B	Rare	---	---	>6.0	---	---	---	---
Wholan-----	B	Rare	---	---	>6.0	---	---	---	---
492: Pineval-----	B	None	---	---	>6.0	---	---	---	---
Rebel-----	B	Rare	---	---	>6.0	---	---	---	---
494: Pineval-----	B	None	---	---	>6.0	---	---	---	---
Buckaroo-----	C	None	---	---	>6.0	---	---	---	---



TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
494 (con.): Rebel-----	B	Rare	---	---	>6.0	---	---	---	---
500: Louderback-----	C	Rare	---	---	3.0-5.0	Apparent	Mar-Jun	---	---
Rustigate-----	C	Rare	---	---	3.0-5.0	Apparent	Dec-Jul	---	---
Isolde-----	A	None	---	---	>6.0	---	---	---	---
511: Grumblen-----	D	None	---	---	>6.0	---	---	---	---
Pickup-----	C	None	---	---	>6.0	---	---	---	---
520: Pineval-----	B	Rare	---	---	>6.0	---	---	---	---
Bluewing-----	A	Occasional	---	Jul-Sep	>6.0	---	---	---	---
Inmo-----	A	Rare	---	---	>6.0	---	---	---	---
530: Cleaver-----	D	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
Bluewing-----	A	Occasional	---	Jul-Sep	>6.0	---	---	---	---
532: Cleaver-----	D	None	---	---	>6.0	---	---	---	---
Ricert-----	B	None	---	---	>6.0	---	---	---	---
Barnmot-----	D	None	---	---	>6.0	---	---	---	---
533: Cleaver-----	D	None	---	---	>6.0	---	---	---	---
Buffaran-----	D	None	---	---	>6.0	---	---	---	---
535: Cleaver-----	D	None	---	---	>6.0	---	---	---	---
Bundorf-----	D	None	---	---	>6.0	---	---	---	---
536: Cleaver-----	D	None	---	---	>6.0	---	---	---	---
Rednik-----	B	None	---	---	>6.0	---	---	---	---
537: Cleaver-----	D	None	---	---	>6.0	---	---	---	---
Otomo-----	D	None	---	---	>6.0	---	---	---	---
538: Cleaver-----	D	None	---	---	>6.0	---	---	---	---
Genegra-----	B	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
538 (con.): Roic-----	D	None	---	---	>6.0	---	---	---	---
540: Doughide-----	D	None	---	---	>6.0	---	---	---	---
Itca-----	D	None	---	---	>6.0	---	---	---	---
Ravenswood-----	C	None	---	---	>6.0	---	---	---	---
551: Yerington-----	A	None	---	---	>6.0	---	---	---	---
560: Izod-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
572: Rawe-----	C	None	---	---	>6.0	---	---	---	---
Malpais-----	B	None	---	---	>6.0	---	---	---	---
580: Welch-----	D	Occasional	Brief	Mar-Jun	1.0-1.5	Apparent	Nov-Jun	---	---
590: Rebel-----	B	Rare	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
Yody-----	C	None	---	---	>6.0	---	---	---	---
591: Rebel-----	B	Rare	---	---	>6.0	---	---	---	---
592: Rebel-----	B	Rare	---	---	>6.0	---	---	---	---
Wholan-----	B	Rare	---	---	>6.0	---	---	---	---
Pineval-----	B	Rare	---	---	>6.0	---	---	---	---
600: Hooten-----	D	None	---	---	>6.0	---	---	---	---
Bango-----	B	None	---	---	>6.0	---	---	---	---
Isolde-----	A	None	---	---	>6.0	---	---	---	---
610: Barnmot-----	D	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	Rare	---	---	>6.0	---	---	---	---
Badland-----	D	None	---	---	>6.0	---	---	---	---
620: Findout-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
620 (con.): Uripnes-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
621: Findout-----	D	None	---	---	>6.0	---	---	---	---
Izod-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
622: Findout-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
640: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Bango-----	B	None	---	---	>6.0	---	---	---	---
643: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
644: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Toulon-----	B	None	---	---	>6.0	---	---	---	---
Chuckles-----	B	None	---	---	>6.0	---	---	---	---
645: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
650: Labou-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
660: Loomer-----	D	None	---	---	>6.0	---	---	---	---
Duco-----	D	None	---	---	>6.0	---	---	---	---
662: Loomer-----	D	None	---	---	>6.0	---	---	---	---
Bombadil-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
670: Celeton-----	D	None	---	---	>6.0	---	---	---	---
Genegraf-----	B	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
670 (con.): Bedwyr-----	D	None	---	---	>6.0	---	---	---	---
671: Celeston-----	D	None	---	---	>6.0	---	---	---	---
Bedwyr-----	D	None	---	---	>6.0	---	---	---	---
Watcoopah-----	B	None	---	---	>6.0	---	---	---	---
672: Celeston-----	D	None	---	---	>6.0	---	---	---	---
Barnmot-----	D	None	---	---	>6.0	---	---	---	---
Chilper-----	D	None	---	---	>6.0	---	---	---	---
680: Bombadil-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
691: Osobb-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
Pirouette-----	D	None	---	---	>6.0	---	---	---	---
700: Clanalpine-----	C	None	---	---	>6.0	---	---	---	---
Itca-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
710: Luning-----	A	Rare	---	---	>6.0	---	---	---	---
Izo-----	A	Occasional	---	Dec-Aug	>6.0	---	---	---	---
730: Hooplite-----	D	None	---	---	>6.0	---	---	---	---
Theon-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
731: Hooplite-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
732: Hooplite-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
732 (con.): Puett-----	D	None	---	---	>6.0	---	---	---	---
733: Hooplite-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Jung-----	D	None	---	---	>6.0	---	---	---	---
734: Hooplite-----	D	None	---	---	>6.0	---	---	---	---
Theon-----	D	None	---	---	>6.0	---	---	---	---
Puett-----	D	None	---	---	>6.0	---	---	---	---
735: Hooplite-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Duco-----	D	None	---	---	>6.0	---	---	---	---
740: Packer-----	B	None	---	---	>6.0	---	---	---	---
Layview-----	D	None	---	---	>6.0	---	---	---	---
Hapgood-----	B	None	---	---	>6.0	---	---	---	---
741: Packer-----	B	None	---	---	>6.0	---	---	---	---
Hapgood-----	B	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
760: Burnborough-----	B	None	---	---	>6.0	---	---	---	---
Cleavage-----	D	None	---	---	>6.0	---	---	---	---
Welch-----	D	Occasional	Brief	Mar-Jun	1.0-1.5	Apparent	Nov-Jun	---	---
761: Burnborough-----	B	None	---	---	>6.0	---	---	---	---
Cleavage-----	D	None	---	---	>6.0	---	---	---	---
Reluctan-----	C	None	---	---	>6.0	---	---	---	---
770: Chilper-----	D	None	---	---	>6.0	---	---	---	---
Bundorf-----	D	None	---	---	>6.0	---	---	---	---
Trocken-----	B	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
772:									
Chilper-----	D	None	---	---	>6.0	---	---	---	---
Trocken-----	B	None	---	---	>6.0	---	---	---	---
Jerval-----	B	None	---	---	>6.0	---	---	---	---
790:									
Jacratz-----	D	None	---	---	>6.0	---	---	---	---
Nayfan-----	C	None	---	---	>6.0	---	---	---	---
800:									
Bedwyr-----	D	None	---	---	>6.0	---	---	---	---
Celeton-----	D	None	---	---	>6.0	---	---	---	---
802:									
Bedwyr-----	D	None	---	---	>6.0	---	---	---	---
Bedzee-----	D	None	---	---	>6.0	---	---	---	---
Jobpeak-----	D	None	---	---	>6.0	---	---	---	---
820:									
Aboten-----	D	None	---	---	>6.0	---	---	---	---
Inmo-----	A	Occasional	---	Nov-Aug	>6.0	---	---	---	---
Bluewing-----	A	Occasional	---	Jul-Sep	>6.0	---	---	---	---
830:									
Corral-----	C	None	---	---	>6.0	---	---	---	---
Celeton-----	D	None	---	---	>6.0	---	---	---	---
Bedwyr-----	D	None	---	---	>6.0	---	---	---	---
840:									
Belate-----	B	None	---	---	>6.0	---	---	---	---
Roca-----	D	None	---	---	>6.0	---	---	---	---
Cleavage-----	D	None	---	---	>6.0	---	---	---	---
850:									
Walti-----	D	None	---	---	>6.0	---	---	---	---
Roca-----	D	None	---	---	>6.0	---	---	---	---
Belate-----	B	None	---	---	>6.0	---	---	---	---
860:									
Teguro-----	D	None	---	---	>6.0	---	---	---	---
Colbar-----	C	None	---	---	>6.0	---	---	---	---
Cleavage-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
870:									
Chill-----	D	None	---	---	>6.0	---	---	---	---
Cleavage-----	D	None	---	---	>6.0	---	---	---	---
880:									
Coppereid-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
Findout-----	D	None	---	---	>6.0	---	---	---	---
900:									
Playas-----	D	Rare	---	---	-1.0-1.0	Apparent	Feb-Sep	Long	1.0
901:									
Dune Land-----	A	None	---	---	>6.0	---	---	---	---
Isolde-----	A	None	---	---	>6.0	---	---	---	---
902:									
Badland-----	D	None	---	---	>6.0	---	---	---	---
903:									
Badland-----	D	None	---	---	>6.0	---	---	---	---
Rebel-----	B	Rare	---	---	>6.0	---	---	---	---
Yody-----	C	None	---	---	>6.0	---	---	---	---
910:									
Theriot-----	D	None	---	---	>6.0	---	---	---	---
Findout-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
930:									
Layview-----	D	None	---	---	>6.0	---	---	---	---
Packer-----	B	None	---	---	>6.0	---	---	---	---
Hapgood-----	B	None	---	---	>6.0	---	---	---	---
940:									
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Rubble Land-----	A	None	---	---	>6.0	---	---	---	---
960:									
Kolda-----	D	None	---	---	-3.0-0.0	Apparent	Jan-Dec	---	3.0
Umlerland-----	D	Rare	---	---	1.5-2.5	Apparent	Dec-Jun	---	---
970:									
Jobpeak-----	D	None	---	---	>6.0	---	---	---	---
Teguro-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
970 (con.): Rock Outcrop.									
980:									
Madeline-----	D	None	---	---	>6.0	---	---	---	---
Millerlux-----	D	None	---	---	>6.0	---	---	---	---
990:									
Millerlux-----	D	None	---	---	>6.0	---	---	---	---
Ninemile-----	D	None	---	---	>6.0	---	---	---	---
Madeline-----	D	None	---	---	>6.0	---	---	---	---
1000:									
Stumble-----	A	None	---	---	>6.0	---	---	---	---
1010:									
Downeyville-----	D	None	---	---	>6.0	---	---	---	---
Stewval-----	D	None	---	---	>6.0	---	---	---	---
Blacktop-----	D	None	---	---	>6.0	---	---	---	---
1011:									
Downeyville-----	D	None	---	---	>6.0	---	---	---	---
Blacktop-----	D	None	---	---	>6.0	---	---	---	---
1012:									
Downeyville-----	D	None	---	---	>6.0	---	---	---	---
Downeyville-----	D	None	---	---	>6.0	---	---	---	---
Blacktop-----	D	None	---	---	>6.0	---	---	---	---
1013:									
Downeyville-----	D	None	---	---	>6.0	---	---	---	---
Downeyville-----	D	None	---	---	>6.0	---	---	---	---
Gabbvally-----	D	None	---	---	>6.0	---	---	---	---
1020:									
Unsel-----	B	None	---	---	>6.0	---	---	---	---
Annaw-----	B	Rare	---	---	>6.0	---	---	---	---
Izo-----	A	Occasional	---	Dec-Aug	>6.0	---	---	---	---
1023:									
Unsel-----	B	None	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
1024:									
Unsel-----	B	None	---	---	>6.0	---	---	---	---
Desatoya-----	C	None	---	---	>6.0	---	---	---	---



TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
1024 (con.): Roic-----	D	None	---	---	>6.0	---	---	---	---
1025: Unsel-----	B	None	---	---	>6.0	---	---	---	---
Desatoya-----	C	None	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
1026: Unsel-----	B	None	---	---	>6.0	---	---	---	---
Pineval-----	B	None	---	---	>6.0	---	---	---	---
Defler-----	B	Rare	---	---	>6.0	---	---	---	---
1027: Unsel-----	B	None	---	---	>6.0	---	---	---	---
Roic-----	D	None	---	---	>6.0	---	---	---	---
Annaw-----	B	Rare	---	---	>6.0	---	---	---	---
1030: Goldyke-----	D	None	---	---	>6.0	---	---	---	---
Blacktop-----	D	None	---	---	>6.0	---	---	---	---
Koyen-----	B	None	---	---	>6.0	---	---	---	---
1040: Terlco-----	B	None	---	---	>6.0	---	---	---	---
Annaw-----	B	Rare	---	---	>6.0	---	---	---	---
Izo-----	A	Occasional	---	Dec-Aug	>6.0	---	---	---	---
1050: Ceejay-----	D	None	---	---	>6.0	---	---	---	---
Olac-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
1061: Olac-----	D	None	---	---	>6.0	---	---	---	---
Theon-----	D	None	---	---	>6.0	---	---	---	---
Pirouette-----	D	None	---	---	>6.0	---	---	---	---
1062: Olac-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Ceejay-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
1071:									
Ganaflan-----	C	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
1090:									
Umberland-----	D	Rare	---	---	2.5-5.0	Apparent	Dec-Jun	---	---
Isolde-----	A	None	---	---	>6.0	---	---	---	---
1100:									
Theon-----	D	None	---	---	>6.0	---	---	---	---
Olac-----	D	None	---	---	>6.0	---	---	---	---
1101:									
Theon-----	D	None	---	---	>6.0	---	---	---	---
Theon-----	D	None	---	---	>6.0	---	---	---	---
1102:									
Theon-----	D	None	---	---	>6.0	---	---	---	---
Theon-----	D	None	---	---	>6.0	---	---	---	---
1104:									
Theon-----	D	None	---	---	>6.0	---	---	---	---
Roic-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
1120:									
Patna-----	B	None	---	---	>6.0	---	---	---	---
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Juva-----	B	Occasional	---	Jun-Sep	>6.0	---	---	---	---
1121:									
Patna-----	B	None	---	---	>6.0	---	---	---	---
1130:									
Malpais-----	B	None	---	---	>6.0	---	---	---	---
Malpais-----	B	None	---	---	>6.0	---	---	---	---
1140:									
Roic-----	D	None	---	---	>6.0	---	---	---	---
Biddleman-----	B	None	---	---	>6.0	---	---	---	---
Hooten-----	D	None	---	---	>6.0	---	---	---	---
1142:									
Roic-----	D	None	---	---	>6.0	---	---	---	---
Mazuma-----	B	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
1142 (con.): Celeton-----	D	None	---	---	>6.0	---	---	---	---
1143: Roic-----	D	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
Celeton-----	D	None	---	---	>6.0	---	---	---	---
1144: Roic-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
Celeton-----	D	None	---	---	>6.0	---	---	---	---
1145: Roic-----	D	None	---	---	>6.0	---	---	---	---
Patna-----	B	None	---	---	>6.0	---	---	---	---
1150: Phing-----	D	None	---	---	>6.0	---	---	---	---
Buffaran-----	D	None	---	---	>6.0	---	---	---	---
1160: Sojur-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
1171: Tocan-----	B	None	---	---	>6.0	---	---	---	---
Aboten-----	D	None	---	---	>6.0	---	---	---	---
1180: Jerval-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
1200: Arclay-----	D	None	---	---	>6.0	---	---	---	---
1210: Biga-----	C	None	---	---	>6.0	---	---	---	---
Granshaw-----	B	None	---	---	>6.0	---	---	---	---
Labkey-----	B	None	---	---	>6.0	---	---	---	---
1211: Biga-----	C	None	---	---	>6.0	---	---	---	---
1212: Biga-----	C	None	---	---	>6.0	---	---	---	---
Roic-----	D	None	---	---	>6.0	---	---	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
1212 (con.): Labkey-----	B	None	---	---	>6.0	---	---	---	---
1220: Labkey-----	B	None	---	---	>6.0	---	---	---	---
1230: Genegra-----	B	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
1231: Genegra-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	Occasional	---	Jul-Sep	>6.0	---	---	---	---
1232: Genegra-----	B	None	---	---	>6.0	---	---	---	---
Rednik-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	Rare	---	---	>6.0	---	---	---	---
1233: Genegra-----	B	None	---	---	>6.0	---	---	---	---
Buckaroo-----	C	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	Occasional	---	Jul-Sep	>6.0	---	---	---	---
1280: Soar-----	D	None	---	---	>6.0	---	---	---	---
Arclay-----	D	None	---	---	>6.0	---	---	---	---
Soar-----	D	None	---	---	>6.0	---	---	---	---
1290: Slocave-----	D	None	---	---	>6.0	---	---	---	---
Vium-----	D	None	---	---	>6.0	---	---	---	---
1300: Lovelo-----	C	Rare	---	---	>6.0	---	---	---	---
1301: Lovelo-----	D	Rare	---	---	-3.0-3.0	Apparent	Jan-Dec	Long	3.0
1320: Gardella-----	D	None	---	---	>6.0	---	---	---	---
1330: Parran-----	D	None	---	---	2.5-3.5	Apparent	Nov-Mar	---	---
1331: Parran-----	D	None	---	---	2.5-3.5	Apparent	Nov-Mar	---	---

TABLE 15.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
1331 (con.): Hawsley-----	A	None	---	---	>6.0	---	---	---	---
1332: Parran-----	D	None	---	---	2.5-3.5	Apparent	Nov-Mar	---	---
Umberland-----	D	Rare	---	---	1.5-2.5	Apparent	Dec-Jun	---	---
1340: Inmo-----	A	Rare	---	---	>6.0	---	---	---	---
Inmo-----	A	Occasional	---	Nov-Aug	>6.0	---	---	---	---



TABLE 16.--SOIL FEATURES

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
100:									
Budihol-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Chill-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
102:									
Budihol-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Minneha-----	13-20	Soft	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
110:									
Bimmer-----	3-10	Soft	---	---	---	---	Low	Moderate	Low
Chill-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
120:									
Nemico-----	11-25	Hard	10-20	Thin	---	---	Low	High	Low
Mirkwood-----	4-14	Hard	---	---	---	---	Low	Moderate	Low
Rock Outcrop.									
130:									
Bedzee-----	10-20	Soft	---	---	---	---	Moderate	High	Moderate
Loomer-----	14-20	Hard	---	---	---	---	Low	Moderate	Low
Bedwyr-----	10-20	Soft	---	---	---	---	Moderate	High	High
140:									
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
141:									
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
Isolde-----	>60	---	---	---	---	---	Low	High	Low
142:									
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
Appian-----	>60	---	---	---	---	---	Low	High	Moderate
Ruhe-----	14-20	Soft	---	---	---	---	Low	High	Low
143:									
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
Gamgee-----	>60	---	---	---	---	---	Low	High	Low
144:									
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate

[illegible]



TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
161:									
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
Uripnes-----	4-14	Soft	---	---	---	---	Low	Moderate	Low
Rock Outcrop.									
162:									
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Rezave-----	14-20	Hard	---	---	---	---	Low	High	High
164:									
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
Loomer-----	14-20	Hard	---	---	---	---	Low	Moderate	Low
170:									
Isolde-----	>60	---	---	---	---	---	Low	High	Low
Dune Land-----	>60	---	---	---	---	---	None	Low	Low
Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate
171:									
Isolde-----	>60	---	---	---	---	---	Low	High	Low
Parran-----	>60	---	---	---	---	---	High	High	High
Appian-----	>60	---	---	---	---	---	Low	High	Moderate
172:									
Isolde-----	>60	---	---	---	---	---	Low	High	Low
Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
173:									
Isolde-----	>60	---	---	---	---	---	Low	High	Low
174:									
Isolde-----	>60	---	---	---	---	---	Low	High	Low
Ragtown-----	>60	---	---	---	---	---	Low	High	High
180:									
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Inmo-----	>60	---	---	---	---	---	Low	High	Low
181:									
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
184:									
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Bluewing-----	>60	---	---	---	---	---	Low	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
184 (con.): Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
185: Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Toulon-----	>60	---	---	---	---	---	Low	High	Low
Rock Outcrop.									
186: Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
190: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
191: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
Rock Outcrop.									
192: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
193: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Mirkwood-----	4-14	Hard	---	---	---	---	Low	Moderate	Low
Rock Outcrop.									
194: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Hooplite-----	6-14	Hard	---	---	---	---	Moderate	High	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
199: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Olac-----	8-14	Hard	---	---	---	---	Moderate	Moderate	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
200: Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate
Osobb-----	9-20	Hard	8-19	Thin	---	---	Low	High	Low
Rock Outcrop.									
201: Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
201 (con.):									
Osobb-----	9-20	Hard	8-19	Thin	---	---	Low	High	Low
Celeton-----	4-14	Soft	---	---	---	---	Low	High	Low
203:									
Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
204:									
Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate
Osobb-----	9-20	Hard	8-19	Thin	---	---	Low	High	Low
Isolde-----	>60	---	---	---	---	---	Low	High	Low
206:									
Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate
Osobb-----	9-20	Hard	8-19	Thin	---	---	Low	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
207:									
Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate
Rezave-----	14-20	Hard	---	---	---	---	Low	High	High
Osobb-----	9-20	Hard	8-19	Thin	---	---	Low	High	Low
208:									
Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Rubble Land-----	>40	Hard	---	---	---	---	None	---	---
210:									
Biddleman-----	>60	---	---	---	---	---	Low	High	High
Biddleman-----	>60	---	---	---	---	---	Low	High	High
211:									
Biddleman-----	>60	---	---	---	---	---	Low	High	High
Trocken-----	>60	---	---	---	---	---	Low	High	Low
Biddleman-----	>60	---	---	---	---	---	Low	High	High
213:									
Biddleman-----	>60	---	---	---	---	---	Low	High	High
Trocken-----	>60	---	---	---	---	---	Low	High	Low
214:									
Biddleman-----	>60	---	---	---	---	---	Low	High	High
Trocken-----	>60	---	---	---	---	---	Low	High	Low
Ruhe-----	14-20	Soft	---	---	---	---	Low	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
215:									
Biddleman-----	>60	---	---	---	---	---	Low	High	High
Isolde-----	>60	---	---	---	---	---	Low	High	Low
216:									
Biddleman-----	>60	---	---	---	---	---	Low	High	High
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	High
220:									
Bango-----	>60	---	---	---	---	---	Low	High	Moderate
Stumble-----	>60	---	---	---	---	---	Low	High	Low
221:									
Bango-----	>60	---	---	---	---	---	Low	High	High
Appian-----	>60	---	---	---	---	---	Low	High	Moderate
222:									
Bango-----	>60	---	---	---	---	---	Low	High	Moderate
Playas-----	>60	---	---	---	---	---	None	High	High
Chuckles-----	>60	---	---	---	---	---	Low	High	High
230:									
Uripnes-----	4-14	Soft	---	---	---	---	Low	Moderate	Low
Budihol-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
231:									
Uripnes-----	4-14	Soft	---	---	---	---	Low	Moderate	Low
Budihol-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Chill-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
232:									
Uripnes-----	4-14	Soft	---	---	---	---	Low	Moderate	Low
Rock Outcrop.									
240:									
Watoopah-----	>60	---	---	---	---	---	Moderate	High	Low
Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
Buckaroo-----	>60	---	---	---	---	---	Low	High	Low
241:									
Watoopah-----	>60	---	---	---	---	---	Moderate	High	Low
Buckaroo-----	>60	---	---	---	---	---	Low	High	Low
Wholan-----	>60	---	---	---	---	---	Low	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
250:									
Rezave-----	14-20	Hard	---	---	---	---	Low	High	High
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
Rock Outcrop.									
260:									
Appian-----	>60	---	---	---	---	---	Low	High	Moderate
Playas-----	>60	---	---	---	---	---	None	High	High
261:									
Appian-----	>60	---	---	---	---	---	Low	High	Moderate
262:									
Appian-----	>60	---	---	---	---	---	Low	High	Moderate
Juva-----	>60	---	---	---	---	---	Low	High	Moderate
Bango-----	>60	---	---	---	---	---	Low	High	High
270:									
Fubble-----	14-20	Hard	---	---	---	---	Moderate	High	Low
Nicanor-----	5-14	Soft	---	---	---	---	Moderate	Moderate	Low
280:									
Trocken-----	>60	---	---	---	---	---	Low	High	High
Chuckles-----	>60	---	---	---	---	---	Low	High	High
281:									
Trocken-----	>60	---	---	---	---	---	Low	High	High
Ragtown-----	>60	---	---	---	---	---	Low	High	High
283:									
Trocken-----	>60	---	---	---	---	---	Low	High	High
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
284:									
Trocken-----	>60	---	---	---	---	---	Low	High	Low
290:									
Huxley-----	>60	---	---	---	---	---	Low	High	Moderate
300:									
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Colbar-----	20-40	Hard	---	---	---	---	Moderate	High	Low
Rock Outcrop.									
301:									
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Mirkwood-----	4-14	Hard	---	---	---	---	Low	Moderate	Low
Nemico-----	11-25	Hard	10-20	Thin	---	---	Low	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
302:									
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
Rock Outcrop.									
304:									
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Bombadil-----	7-14	Hard	---	---	---	---	Moderate	Moderate	Low
Loomer-----	14-20	Hard	---	---	---	---	Low	Moderate	Low
305:									
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Colbar-----	20-40	Hard	---	---	---	---	Moderate	High	Low
Rock Outcrop.									
307:									
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Rock Outcrop.									
308:									
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Clan Alpine-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
Colbar-----	20-40	Hard	---	---	---	---	Moderate	High	Low
309:									
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Pickup-----	20-40	Hard	---	---	---	---	Low	High	Low
Loomer-----	14-20	Hard	---	---	---	---	Low	Moderate	Low
310:									
Rednik-----	>60	---	---	---	---	---	Low	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	Low
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
311:									
Rednik-----	>60	---	---	---	---	---	Low	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	Low
Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
313:									
Rednik-----	>60	---	---	---	---	---	Low	High	Low
Ricert-----	>60	---	---	---	---	---	Low	High	High

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
313 (con.): Troocken-----	>60	---	---	---	---	---	Low	High	High
315: Rednik-----	>60	---	---	---	---	---	Low	High	Low
Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
Barnmot-----	>60	---	---	---	---	---	Low	High	High
316: Rednik-----	>60	---	---	---	---	---	Low	High	Low
Rednik-----	>60	---	---	---	---	---	Low	High	Low
317: Rednik-----	>60	---	---	---	---	---	Low	High	Low
Cleaver-----	>60	---	10-20	Thick	---	---	Low	High	Low
Troocken-----	>60	---	---	---	---	---	Low	High	Low
320: Jung-----	14-20	Hard	---	---	---	---	Low	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Rock Outcrop.									
321: Jung-----	14-20	Hard	---	---	---	---	Low	High	Low
Desatoya-----	>60	---	---	---	---	---	Moderate	High	Low
Roca-----	20-40	Hard	---	---	---	---	Low	High	Low
322: Jung-----	14-20	Hard	---	---	---	---	Low	High	Low
Puett-----	10-20	Soft	---	---	---	---	Moderate	High	Low
Buffaran-----	>60	---	14-20	Thick	---	---	Low	High	Low
324: Jung-----	14-20	Hard	---	---	---	---	Low	High	Low
Clanalpine-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
Colbar-----	20-40	Hard	---	---	---	---	Moderate	High	Low
325: Jung-----	14-20	Hard	---	---	---	---	Low	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Clanalpine-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
330: Settlement-----	>60	---	---	---	---	---	High	High	High
Louderback-----	>60	---	---	---	---	---	Moderate	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
330 (con.): Rustigate-----	>60	---	---	---	---	---	High	High	Low
331: Settlement-----	>60	---	---	---	---	---	High	High	High
Chuckles-----	>60	---	---	---	---	---	Low	High	High
Rustigate-----	>60	---	---	---	---	---	High	High	Low
340: Slaw-----	>60	---	---	---	---	---	Low	High	High
Juva-----	>60	---	---	---	---	---	Low	High	Moderate
Wholan-----	>60	---	---	---	---	---	Low	High	Low
341: Slaw-----	>60	---	---	---	---	---	Low	High	High
Chuckles-----	>60	---	---	---	---	---	Low	High	High
342: Slaw-----	>60	---	---	---	---	---	Low	High	High
Mazuma-----	>60	---	---	---	---	---	Low	High	High
Hessing-----	>60	---	---	---	---	---	Low	High	High
343: Slaw-----	>60	---	---	---	---	---	Low	High	High
Trocken-----	>60	---	---	---	---	---	Low	High	High
Chuckles-----	>60	---	---	---	---	---	Low	High	High
344: Slaw-----	>60	---	---	---	---	---	Low	High	High
Ragtown-----	>60	---	---	---	---	---	Low	High	High
350: Ricert-----	>60	---	---	---	---	---	Low	High	High
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
351: Ricert-----	>60	---	---	---	---	---	Low	High	High
Chilper-----	>60	---	---	---	---	---	Low	High	High
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
352: Ricert-----	>60	---	---	---	---	---	Low	High	High
Desatoya-----	>60	---	---	---	---	---	Moderate	High	Low
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low



TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
353:									
Ricert-----	>60	---	---	---	---	---	Low	High	High
Trocken-----	>60	---	---	---	---	---	Low	High	High
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
358:									
Ricert-----	>60	---	---	---	---	---	Low	High	High
Desatoya-----	>60	---	---	---	---	---	Moderate	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	High
359:									
Ricert-----	>60	---	---	---	---	---	Low	High	High
Celeton-----	4-14	Soft	---	---	---	---	Low	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	Low
360:									
Ricert-----	>60	---	---	---	---	---	Low	High	High
Trocken-----	>60	---	---	---	---	---	Low	High	High
Rebel-----	>60	---	---	---	---	---	Moderate	High	Low
370:									
Duco-----	10-20	Hard	---	---	---	---	Moderate	Moderate	Low
Clan Alpine-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
Jung-----	14-20	Hard	---	---	---	---	Low	High	Low
371:									
Duco-----	10-20	Hard	---	---	---	---	Moderate	Moderate	Low
Clan Alpine-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
373:									
Duco-----	10-20	Hard	---	---	---	---	Moderate	Moderate	Low
Itca-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Puett-----	10-20	Soft	---	---	---	---	Moderate	High	Low
380:									
Itca-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Clan Alpine-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
381:									
Itca-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Reluctan-----	20-40	Hard	---	---	---	---	Moderate	Moderate	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
381 (con.): Walti-----	20-30	Hard	---	---	---	---	Low	Moderate	Low
390: Defler-----	>60	---	---	---	---	---	Low	High	Low
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
391: Defler-----	>60	---	---	---	---	---	Low	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	High
400: Chuckles-----	>60	---	---	---	---	---	Low	High	High
Playas-----	>60	---	---	---	---	---	None	High	High
401: Chuckles-----	>60	---	---	---	---	---	Low	High	High
Bango-----	>60	---	---	---	---	---	Low	High	Moderate
402: Chuckles-----	>60	---	---	---	---	---	Low	High	High
Playas-----	>60	---	---	---	---	---	None	High	High
Slaw-----	>60	---	---	---	---	---	Low	High	High
404: Chuckles-----	>60	---	---	---	---	---	Low	High	High
Settlement-----	>60	---	---	---	---	---	High	High	High
Rebel-----	>60	---	---	---	---	---	Moderate	High	Low
410: Buffaran-----	>60	---	14-20	Thick	---	---	Low	High	Low
Desatoya-----	>60	---	---	---	---	---	Moderate	High	Low
411: Buffaran-----	>60	---	14-20	Thick	---	---	Low	High	Low
Rebel-----	>60	---	---	---	---	---	Moderate	High	Low
Puett-----	10-20	Soft	---	---	---	---	Moderate	High	Low
420: Trocken-----	>60	---	---	---	---	---	Low	High	High
Hessing-----	>60	---	---	---	---	---	Low	High	High
Dun Glen-----	>60	---	---	---	---	---	Low	High	Low
422: Trocken-----	>60	---	---	---	---	---	Low	High	High
Hessing-----	>60	---	---	---	---	---	Low	High	High

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
422 (con.): Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
423: Trocken-----	>60	---	---	---	---	---	Low	High	Low
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	High
425: Trocken-----	>60	---	---	---	---	---	Low	High	High
Hessing-----	>60	---	---	---	---	---	Low	High	High
Defler-----	>60	---	---	---	---	---	Low	High	Low
430: Kram-----	8-14	Hard	---	---	---	---	Moderate	High	Low
Attella-----	6-10	Hard	---	---	---	---	Moderate	High	Low
Rock Outcrop.									
432: Kram-----	8-14	Hard	---	---	---	---	Moderate	High	Low
Findout-----	8-14	Hard	---	---	---	---	Low	High	Low
Rock Outcrop.									
433: Kram-----	8-14	Hard	---	---	---	---	Moderate	High	Low
Hopeka-----	4-10	Hard	---	---	---	---	Moderate	High	Low
Rock Outcrop.									
440: Ravenswood-----	30-40	Hard	---	---	---	---	Moderate	Moderate	Low
Itca-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Walti-----	20-30	Hard	---	---	---	---	Low	Moderate	Low
450: Wholan-----	>60	---	---	---	---	---	Low	High	Low
Wholan-----	>60	---	---	---	---	---	Low	High	Low
Defler-----	>60	---	---	---	---	---	Low	High	Low
460: Juva-----	>60	---	---	---	---	---	Low	High	Moderate
Wholan-----	>60	---	---	---	---	---	Low	High	Low
Stumble-----	>60	---	---	---	---	---	Low	High	Low
470: Hessing-----	>60	---	---	---	---	---	Low	High	High

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
470 (con.):									
Wholan-----	>60	---	---	---	---	---	Low	High	Low
Dun Glen-----	>60	---	---	---	---	---	Low	High	Low
471:									
Hessing-----	>60	---	---	---	---	---	Low	High	High
Dun Glen-----	>60	---	---	---	---	---	Low	High	Low
Bango-----	>60	---	---	---	---	---	Low	High	Moderate
480:									
Yody-----	>60	---	30-40	Thick	---	---	Moderate	High	Low
Buffaran-----	>60	---	14-20	Thick	---	---	Low	High	Low
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
481:									
Yody-----	>60	---	30-40	Thick	---	---	Moderate	High	Low
Ricert-----	>60	---	---	---	---	---	Low	High	High
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
484:									
Yody-----	>60	---	30-40	Thick	---	---	Moderate	High	Low
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
491:									
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
Rebel-----	>60	---	---	---	---	---	Moderate	High	Low
Wholan-----	>60	---	---	---	---	---	Low	High	Low
492:									
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
Rebel-----	>60	---	---	---	---	---	Moderate	High	Low
494:									
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
Buckaroo-----	>60	---	---	---	---	---	Low	High	Low
Rebel-----	>60	---	---	---	---	---	Moderate	High	Low
500:									
Louderback-----	>60	---	---	---	---	---	Moderate	High	Low
Rustigate-----	>60	---	---	---	---	---	High	High	Low
Isolde-----	>60	---	---	---	---	---	Low	High	Low
511:									
Grumblen-----	14-20	Hard	---	---	---	---	Low	High	Low
Pickup-----	20-40	Hard	---	---	---	---	Low	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
520:									
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Inmo-----	>60	---	---	---	---	---	Low	High	Low
530:									
Cleaver-----	>60	---	10-20	Thick	---	---	Low	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	Low
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
532:									
Cleaver-----	>60	---	10-20	Thick	---	---	Low	High	Low
Ricert-----	>60	---	---	---	---	---	Low	High	High
Barnmot-----	>60	---	---	---	---	---	Low	High	High
533:									
Cleaver-----	>60	---	10-20	Thick	---	---	Low	High	Low
Buffaran-----	>60	---	14-20	Thick	---	---	Low	High	Low
535:									
Cleaver-----	>60	---	10-20	Thick	---	---	Low	High	Low
Bundorf-----	>60	---	14-20	Thick	---	---	Low	High	Low
536:									
Cleaver-----	>60	---	10-20	Thick	---	---	Low	High	Low
Rednik-----	>60	---	---	---	---	---	Low	High	Low
537:									
Cleaver-----	>60	---	10-20	Thick	---	---	Low	High	Low
Otomo-----	>60	---	6-14	Thick	---	---	Low	High	Moderate
538:									
Cleaver-----	>60	---	10-20	Thick	---	---	Low	High	Low
Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
Roic-----	4-14	Soft	---	---	---	---	Low	High	High
540:									
Douhide-----	10-20	Hard	---	---	---	---	Low	Moderate	Low
Itca-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Ravenswood-----	30-40	Hard	---	---	---	---	Moderate	Moderate	Low
551:									
Yerington-----	>60	---	---	---	---	---	Low	High	Moderate
560:									
Izod-----	7-14	Hard	---	---	---	---	Moderate	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
560 (con.): Rock Outcrop.									
572: Rawe-----	>60	---	---	---	---	---	Low	High	Low
Malpais-----	>60	---	---	---	---	---	Low	High	Low
580: Welch-----	>60	---	---	---	---	---	High	Moderate	Low
590: Rebel-----	>60	---	---	---	---	---	Moderate	High	Low
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
Yody-----	>60	---	30-40	Thick	---	---	Moderate	High	Low
591: Rebel-----	>60	---	---	---	---	---	Moderate	High	Low
592: Rebel-----	>60	---	---	---	---	---	Moderate	High	Low
Wholan-----	>60	---	---	---	---	---	Low	High	Low
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
600: Hooten-----	>60	---	5-10	Thin	---	---	Low	High	High
Bango-----	>60	---	---	---	---	---	Low	High	Moderate
Isolde-----	>60	---	---	---	---	---	Low	High	Low
610: Barnmot-----	>60	---	---	---	---	---	Low	High	High
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Badland-----	>60	---	---	---	---	---	None	High	High
620: Findout-----	8-14	Hard	---	---	---	---	Low	High	Low
Uripnes-----	4-14	Soft	---	---	---	---	Low	Moderate	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
621: Findout-----	8-14	Hard	---	---	---	---	Low	High	Low
Izod-----	7-14	Hard	---	---	---	---	Moderate	High	Low
Rock Outcrop.									
622: Findout-----	8-14	Hard	---	---	---	---	Low	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
622 (con.): Rock Outcrop.									
640: Mazuma-----	>60	---	---	---	---	---	Low	High	High
Bango-----	>60	---	---	---	---	---	Low	High	Moderate
643: Mazuma-----	>60	---	---	---	---	---	Low	High	High
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
644: Mazuma-----	>60	---	---	---	---	---	Low	High	High
Toulon-----	>60	---	---	---	---	---	Low	High	Low
Chuckles-----	>60	---	---	---	---	---	Low	High	High
645: Mazuma-----	>60	---	---	---	---	---	Low	High	High
650: Labou-----	8-14	Hard	---	---	---	---	Low	High	High
Rock Outcrop.									
660: Loomer-----	14-20	Hard	---	---	---	---	Low	Moderate	Low
Duco-----	10-20	Hard	---	---	---	---	Moderate	Moderate	Low
662: Loomer-----	14-20	Hard	---	---	---	---	Low	Moderate	Low
Bombadil-----	7-14	Hard	---	---	---	---	Moderate	Moderate	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
670: Celeton-----	4-14	Soft	---	---	---	---	Low	High	Low
Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
Bedwyr-----	10-20	Soft	---	---	---	---	Moderate	High	High
671: Celeton-----	4-14	Soft	---	---	---	---	Low	High	Low
Bedwyr-----	10-20	Soft	---	---	---	---	Moderate	High	High
Watoopah-----	>60	---	---	---	---	---	Moderate	High	Low
672: Celeton-----	4-14	Soft	---	---	---	---	Low	High	Low
Barnmot-----	>60	---	---	---	---	---	Low	High	High
Chilper-----	>60	---	---	---	---	---	Low	High	High

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
680:									
Bombadil-----	7-14	Hard	---	---	---	---	Moderate	Moderate	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
691:									
Osobb-----	9-20	Hard	8-19	Thin	---	---	Low	High	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate
700:									
Clanalpine-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
Itca-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
710:									
Luning-----	>60	---	---	---	---	---	Low	High	Low
Izo-----	>60	---	---	---	---	---	Low	High	Low
730:									
Hooplite-----	6-14	Hard	---	---	---	---	Moderate	High	Low
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
731:									
Hooplite-----	6-14	Hard	---	---	---	---	Moderate	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
732:									
Hooplite-----	6-14	Hard	---	---	---	---	Moderate	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Puett-----	10-20	Soft	---	---	---	---	Moderate	High	Low
733:									
Hooplite-----	6-14	Hard	---	---	---	---	Moderate	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Jung-----	14-20	Hard	---	---	---	---	Low	High	Low
734:									
Hooplite-----	6-14	Hard	---	---	---	---	Moderate	High	Low
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Puett-----	10-20	Soft	---	---	---	---	Moderate	High	Low
735:									
Hooplite-----	6-14	Hard	---	---	---	---	Moderate	High	Low



TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
735 (con.): Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Duco-----	10-20	Hard	---	---	---	---	Moderate	Moderate	Low
740: Packer-----	>60	---	---	---	---	---	Moderate	Moderate	Low
Layview-----	10-14	Hard	---	---	---	---	Moderate	Moderate	Low
Hapgood-----	40-60	Hard	---	---	---	---	Moderate	Moderate	Low
741: Packer-----	>60	---	---	---	---	---	Moderate	Moderate	Low
Hapgood-----	40-60	Hard	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
760: Burnborough-----	>60	---	---	---	---	---	Moderate	Moderate	Low
Cleavage-----	14-20	Hard	---	---	---	---	Moderate	Moderate	Low
Welch-----	>60	---	---	---	---	---	High	Moderate	Low
761: Burnborough-----	>60	---	---	---	---	---	Moderate	Moderate	Low
Cleavage-----	14-20	Hard	---	---	---	---	Moderate	Moderate	Low
Reluctan-----	20-40	Hard	---	---	---	---	Moderate	Moderate	Low
770: Chilper-----	>60	---	---	---	---	---	Low	High	High
Bundorf-----	>60	---	14-20	Thick	---	---	Low	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	High
772: Chilper-----	>60	---	---	---	---	---	Low	High	High
Trocken-----	>60	---	---	---	---	---	Low	High	High
Jerval-----	>60	---	---	---	---	---	Low	High	High
790: Jacratz-----	4-10	Soft	---	---	---	---	Moderate	High	Low
Nayfan-----	20-40	Soft	---	---	---	---	Moderate	High	Low
800: Bedwyr-----	10-20	Soft	---	---	---	---	Moderate	High	High
Celeton-----	4-14	Soft	---	---	---	---	Low	High	Low
802: Bedwyr-----	10-20	Soft	---	---	---	---	Moderate	High	High
Bedzee-----	10-20	Soft	---	---	---	---	Moderate	High	Moderate

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
802 (con.): Jobpeak-----	4-12	Hard	---	---	---	---	Moderate	Moderate	Low
820: Aboten-----	>60	---	14-20	Thin	---	---	Low	High	Moderate
Inmo-----	>60	---	---	---	---	---	Low	High	Low
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
830: Corral-----	12-20	Soft	---	---	---	---	Low	Moderate	Low
Celeton-----	4-14	Soft	---	---	---	---	Low	High	Low
Bedwyr-----	10-20	Soft	---	---	---	---	Moderate	High	High
840: Belate-----	>60	---	---	---	---	---	Moderate	Moderate	Low
Roca-----	20-40	Hard	---	---	---	---	Low	High	Low
Cleavage-----	14-20	Hard	---	---	---	---	Moderate	Moderate	Low
850: Walti-----	20-30	Hard	---	---	---	---	Low	Moderate	Low
Roca-----	20-40	Hard	---	---	---	---	Low	High	Low
Belate-----	>60	---	---	---	---	---	Moderate	Moderate	Low
860: Teguro-----	14-20	Hard	---	---	---	---	Moderate	Moderate	Low
Colbar-----	20-40	Hard	---	---	---	---	Moderate	High	Low
Cleavage-----	14-20	Hard	---	---	---	---	Moderate	Moderate	Low
870: Chill-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Cleavage-----	14-20	Hard	---	---	---	---	Moderate	Moderate	Low
880: Coppereid-----	5-10	Soft	---	---	---	---	Moderate	High	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
Findout-----	8-14	Hard	---	---	---	---	Low	High	Low
900: Playas-----	>60	---	---	---	---	---	None	High	High
901: Dune Land-----	>60	---	---	---	---	---	None	Low	Low
Isolde-----	>60	---	---	---	---	---	Low	High	Low
902: Badland-----	>60	---	---	---	---	---	None	High	High

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
903:									
Badland-----	>60	---	---	---	---	---	None	High	High
Rebel-----	>60	---	---	---	---	---	Moderate	High	Low
Yody-----	>60	---	30-40	Thick	---	---	Moderate	High	Low
910:									
Theriot-----	4-20	Hard	---	---	---	---	Low	High	Low
Findout-----	8-14	Hard	---	---	---	---	Low	High	Low
Rock Outcrop.									
930:									
Layview-----	10-14	Hard	---	---	---	---	Moderate	Moderate	Low
Packer-----	40-60	Hard	---	---	---	---	Moderate	Moderate	Low
Hapgood-----	>60	---	---	---	---	---	Moderate	Moderate	Low
940:									
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Rubble Land-----	>40	Hard	---	---	---	---	None	---	---
960:									
Kolda-----	>60	---	---	---	---	---	High	High	High
Umberland-----	>60	---	---	---	---	---	High	High	High
970:									
Jobpeak-----	4-12	Hard	---	---	---	---	Moderate	Moderate	Low
Teguro-----	14-20	Hard	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
980:									
Madeline-----	10-20	Hard	---	---	---	---	Low	Moderate	Low
Millerlux-----	12-20	Hard	---	---	---	---	Low	High	Low
990:									
Millerlux-----	12-20	Hard	---	---	---	---	Low	High	Low
Ninemile-----	10-20	Hard	---	---	---	---	Low	Moderate	Low
Madeline-----	10-20	Hard	---	---	---	---	Low	Moderate	Low
1000:									
Stumble-----	>60	---	---	---	---	---	Low	High	Low
1010:									
Downeyville-----	4-14	Hard	---	---	---	---	Low	High	Low
Stewval-----	4-14	Hard	---	---	---	---	Moderate	Moderate	Low
Blacktop-----	4-10	Hard	---	---	---	---	Low	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
1011:									
Downeyville-----	4-14	Hard	---	---	---	---	Low	High	Low
Blacktop-----	4-10	Hard	---	---	---	---	Low	High	Low
1012:									
Downeyville-----	4-14	Hard	---	---	---	---	Low	High	Low
Downeyville-----	4-14	Hard	---	---	---	---	Low	High	Low
Blacktop-----	4-10	Hard	---	---	---	---	Low	High	Low
1013:									
Downeyville-----	4-14	Hard	---	---	---	---	Low	High	Low
Downeyville-----	4-14	Hard	---	---	---	---	Low	High	Low
Gabbvally-----	6-14	Hard	---	---	---	---	Moderate	Moderate	Low
1020:									
Unsel-----	>60	---	---	---	---	---	Low	High	Low
Annaw-----	>60	---	---	---	---	---	Low	High	Low
Izo-----	>60	---	---	---	---	---	Low	High	Low
1023:									
Unsel-----	>60	---	---	---	---	---	Low	High	Low
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
1024:									
Unsel-----	>60	---	---	---	---	---	Low	High	Low
Desatoya-----	>60	---	---	---	---	---	Moderate	High	Low
Roic-----	4-14	Soft	---	---	---	---	Low	High	High
1025:									
Unsel-----	>60	---	---	---	---	---	Low	High	Low
Desatoya-----	>60	---	---	---	---	---	Moderate	High	Low
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
1026:									
Unsel-----	>60	---	---	---	---	---	Low	High	Low
Pineval-----	>60	---	---	---	---	---	Moderate	High	Low
Defler-----	>60	---	---	---	---	---	Low	High	Low
1027:									
Unsel-----	>60	---	---	---	---	---	Low	High	Low
Roic-----	4-14	Soft	---	---	---	---	Low	High	High
Annaw-----	>60	---	---	---	---	---	Low	High	Low
1030:									
Goldyke-----	2-10	Soft	---	---	---	---	Low	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
1030 (con.): Blacktop-----	4-10	Hard	---	---	---	---	Low	High	Low
Koyen-----	>60	---	---	---	---	---	Low	High	Low
1040: Terlco-----	>60	---	---	---	---	---	Low	High	Moderate
Annaw-----	>60	---	---	---	---	---	Low	High	Low
Izo-----	>60	---	---	---	---	---	Low	High	Low
1050: Ceejay-----	14-20	Hard	---	---	---	---	Low	High	Low
Olac-----	8-14	Hard	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
1061: Olac-----	8-14	Hard	---	---	---	---	Moderate	Moderate	Low
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Pirouette-----	12-23	Hard	11-20	Thin	---	---	Low	High	Moderate
1062: Olac-----	8-14	Hard	---	---	---	---	Moderate	Moderate	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Ceejay-----	14-20	Hard	---	---	---	---	Low	High	Low
1071: Ganaflan-----	20-40	Soft	---	---	---	---	Low	High	Moderate
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	Low
1090: Umberland-----	>60	---	---	---	---	---	High	High	High
Isolde-----	>60	---	---	---	---	---	Low	High	Low
1100: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Olac-----	8-14	Hard	---	---	---	---	Moderate	Moderate	Low
1101: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
1102: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
1104:									
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Roic-----	4-14	Soft	---	---	---	---	Low	High	High
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
1120:									
Patna-----	>60	---	---	---	---	---	Low	High	Low
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
Juva-----	>60	---	---	---	---	---	Low	High	Moderate
1121:									
Patna-----	>60	---	---	---	---	---	Low	High	Low
1130:									
Malpais-----	>60	---	---	---	---	---	Low	High	Low
Malpais-----	>60	---	---	---	---	---	Low	High	Low
1140:									
Roic-----	4-14	Soft	---	---	---	---	Low	High	High
Biddleman-----	>60	---	---	---	---	---	Low	High	High
Hooten-----	>60	---	5-10	Thin	---	---	Low	High	High
1142:									
Roic-----	4-14	Soft	---	---	---	---	Low	High	High
Mazuma-----	>60	---	---	---	---	---	Low	High	High
Celeton-----	4-14	Soft	---	---	---	---	Low	High	Low
1143:									
Roic-----	4-14	Soft	---	---	---	---	Low	High	High
Trocken-----	>60	---	---	---	---	---	Low	High	Low
Celeton-----	4-14	Soft	---	---	---	---	Low	High	Low
1144:									
Roic-----	4-14	Soft	---	---	---	---	Low	High	High
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
Celeton-----	4-14	Soft	---	---	---	---	Low	High	Low
1145:									
Roic-----	4-14	Soft	---	---	---	---	Low	High	High
Patna-----	>60	---	---	---	---	---	Low	High	Low
1150:									
Phing-----	>60	---	---	---	---	---	Low	High	Low
Buffaran-----	>60	---	14-20	Thick	---	---	Low	High	Low

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
1160: Sojur-----	4-10	Hard	---	---	---	---	Low	High	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
1171: Tocan-----	>60	---	---	---	---	---	Low	High	Low
Aboten-----	>60	---	14-20	Thin	---	---	Low	High	Moderate
1180: Jerval-----	>60	---	---	---	---	---	Low	High	High
Trocken-----	>60	---	---	---	---	---	Low	High	Low
1200: Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
1210: Biga-----	>60	---	---	---	---	---	Low	High	Low
Granshaw-----	>60	---	---	---	---	---	Low	High	Low
Labkey-----	>60	---	---	---	---	---	Low	High	Low
1211: Biga-----	>60	---	---	---	---	---	Low	High	Low
1212: Biga-----	>60	---	---	---	---	---	Low	High	Low
Roic-----	4-14	Soft	---	---	---	---	Low	High	High
Labkey-----	>60	---	---	---	---	---	Low	High	Low
1220: Labkey-----	>60	---	---	---	---	---	Low	High	Low
1230: Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Dorper-----	>60	---	---	---	---	---	Low	High	High
1231: Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
Trocken-----	>60	---	---	---	---	---	Low	High	High
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
1232: Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
Rednik-----	>60	---	---	---	---	---	Low	High	Low
Trocken-----	>60	---	---	---	---	---	Low	High	Low
1233: Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate

TABLE 16.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
1233 (con.): Buckaroo-----	>60	---	---	---	---	---	Low	High	Low
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
1280: Soar-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
Soar-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
1290: Slocave-----	4-14	Soft	---	---	---	---	Low	High	Low
Vium-----	8-14	Hard	---	---	---	---	Low	High	Low
1300: Loveloock-----	>60	---	---	---	---	---	Moderate	High	Low
1301: Loveloock-----	>60	---	---	---	---	---	Moderate	High	High
1320: Gardella-----	>60	---	7-12	Thin	---	---	Low	High	High
1330: Parran-----	>60	---	---	---	---	---	High	High	High
1331: Parran-----	>60	---	---	---	---	---	High	High	High
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
1332: Parran-----	>60	---	---	---	---	---	High	High	High
Umberland-----	>60	---	---	---	---	---	High	High	High
1340: Inmo-----	>60	---	---	---	---	---	Low	High	Low
Inmo-----	>60	---	---	---	---	---	Low	High	Low



TABLE 17.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Aboten-----	Haplic Nadurargids, loamy, mixed, mesic, shallow
Annaw-----	Typic Camborthids, sandy-skeletal, mixed, mesic
Appian-----	Typic Natrargids, fine-loamy over sandy or sandy-skeletal, mixed, mesic
Arclay-----	Aridic Argixerolls, loamy, mixed, mesic, shallow
Attella-----	Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), frigid
Bango-----	Haplic Natrargids, fine-loamy, mixed, mesic
Barnmot-----	Typic Torriorthents, fine, montmorillonitic (calcareous), mesic
Bedwyr-----	Typic Natrargids, clayey, montmorillonitic, mesic, shallow
Bedzee-----	Xerollic Haplargids, clayey, montmorillonitic, mesic, shallow
Belate-----	Aridic Argixerolls, loamy-skeletal, mixed, frigid
Biddleman-----	Typic Natrargids, fine-loamy over sandy or sandy-skeletal, mixed, mesic
Biga-----	Duric Natrargids, clayey over loamy, montmorillonitic, mesic
Bimmer-----	Typic Torriorthents, loamy, mixed, nonacid, mesic, shallow
Blacktop-----	Lithic Torriorthents, loamy-skeletal, mixed (calcareous), mesic
Bluewing-----	Typic Torriorthents, sandy-skeletal, mixed, mesic
Bombadil-----	Lithic Xerollic Haplargids, loamy, mixed, mesic
Buckaroo-----	Typic Natrargids, fine, montmorillonitic, mesic
Budihol-----	Xeric Torriorthents, loamy, mixed, nonacid, mesic, shallow
Buffaran-----	Xerollic Durargids, clayey, montmorillonitic, mesic, shallow
Bundorf-----	Typic Durargids, clayey, montmorillonitic, mesic, shallow
Burnborough-----	Aridic Argixerolls, loamy-skeletal, mixed, frigid
Ceejay-----	Lithic Xerollic Haplargids, clayey, montmorillonitic, mesic
Celeton-----	Typic Torriorthents, loamy, mixed (calcareous), mesic, shallow
Chill-----	Xerollic Haplargids, loamy, mixed, mesic, shallow
Chilper-----	Duric Natrargids, clayey over loamy-skeletal, montmorillonitic, mesic
Chuckles-----	Typic Camborthids, fine-silty, mixed, mesic
Cianalpine-----	Typic Argixerolls, loamy-skeletal, mixed, frigid
Cleavage-----	Lithic Argixerolls, loamy-skeletal, mixed, frigid
Cleaver-----	Typic Durargids, loamy, mixed, mesic, shallow
Colbar-----	Xerollic Haplargids, fine-loamy, mixed, mesic
Coppereid-----	Xeric Torriorthents, loamy, mixed (calcareous), mesic, shallow
Corral-----	Xerollic Haplargids, loamy, mixed, mesic, shallow
Defler-----	Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic
Desatoya-----	Durixerollic Haplargids, clayey over loamy-skeletal, montmorillonitic, mesic
Dorper-----	Duric Natrargids, fine, montmorillonitic, mesic
Douhide-----	Lithic Argixerolls, clayey-skeletal, montmorillonitic, frigid
Downeyville-----	Lithic Haplargids, loamy-skeletal, mixed, mesic
Duco-----	Lithic Argixerolls, loamy-skeletal, mixed, mesic
Dun Glen-----	Typic Camborthids, coarse-loamy, mixed, mesic
Findout-----	Lithic Calciorthids, loamy-skeletal, carbonatic, mesic
Fubble-----	Lithic Xerollic Haplargids, loamy, mixed, mesic
Gabbvally-----	Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic
Gamgee-----	Haplic Natrargids, fine-loamy, mixed, mesic
Ganaflan-----	Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic
Gardella-----	Entic Durorthids, sandy, mixed, mesic, shallow
Genegraf-----	Duric Natrargids, fine-loamy, mixed, mesic
Goldyke-----	Typic Torriorthents, loamy, mixed (calcareous), mesic, shallow
Granshaw-----	Typic Haplargids, coarse-loamy, mixed, mesic
Grumblen-----	Lithic Xerollic Haplargids, clayey-skeletal, montmorillonitic, mesic
Hapgood-----	Pachic Cryoborolls, loamy-skeletal, mixed
Hawsley-----	Typic Torripsamments, mixed, mesic
Hessing-----	Typic Camborthids, coarse-loamy, mixed, mesic
Hooplite-----	Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic
Hooten-----	Entic Durorthids, loamy-skeletal, mixed, mesic, shallow
Hopeka-----	Lithic Xeric Torriorthents, loamy-skeletal, carbonatic, frigid
Huxley-----	Typic Natrargids, clayey-skeletal over sandy or sandy-skeletal, montmorillonitic, mesic

TABLE 17.--CLASSIFICATION OF THE SOILS--Continued

Soil name	Family or higher taxonomic class
Inmo-----	Typic Torriorthents, sandy-skeletal, mixed, mesic
Isolde-----	Typic Torripsamments, mixed, mesic
Itca-----	Lithic Argixerolls, clayey-skeletal, montmorillonitic, frigid
Izo-----	Typic Torriorthents, sandy-skeletal, mixed, mesic
Izod-----	Lithic Xeric Torriorthents, loamy-skeletal, carbonatic, mesic
Jacratz-----	Xeric Torriorthents, loamy, mixed (calcareous), mesic, shallow
Jerval-----	Duric Natrargids, fine-loamy, mixed, mesic
Jobpeak-----	Lithic Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic
Jung-----	Lithic Xerollic Haplargids, clayey-skeletal, montmorillonitic, mesic
Juva-----	Typic Torrifluvents, coarse-loamy, mixed (calcareous), mesic
Kolda-----	Typic Endoaquolls, fine, montmorillonitic (calcareous), mesic
Koyen-----	Typic Camborthids, coarse-loamy, mixed, mesic
Kram-----	Lithic Xeric Torriorthents, loamy-skeletal, carbonatic, mesic
Labkey-----	Typic Camborthids, sandy-skeletal, mixed, mesic
Labou-----	Lithic Natrargids, loamy-skeletal, mixed, mesic
Layview-----	Argic Lithic Cryoborolls, loamy-skeletal, mixed
Loomer-----	Lithic Argixerolls, clayey-skeletal, montmorillonitic, mesic
Louderback-----	Oxyaquic Torriorthents, sandy, mixed, mesic
Lovelock-----	Fluvaquentic Endoaquolls, fine, mixed (calcareous), mesic
Luning-----	Typic Torriorthents, sandy, mixed, mesic
Madeline-----	Lithic Argixerolls, clayey, montmorillonitic, frigid
Malpais-----	Typic Camborthids, loamy-skeletal, mixed, mesic
Mazuma-----	Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic
Millerlux-----	Lithic Xerollic Haplargids, clayey, montmorillonitic, frigid
Minneha-----	Aridic Haploxerolls, loamy-skeletal, mixed, mesic, shallow
Mirkwood-----	Lithic Haplargids, loamy-skeletal, mixed, mesic
Nayfan-----	Aridic Haploxerolls, fine-loamy, mixed, frigid
Nemico-----	Typic Nadurargids, clayey, montmorillonitic, mesic, shallow
Nicanor-----	Xeric Torriorthents, loamy, mixed, nonacid, mesic, shallow
Ninemile-----	Lithic Argixerolls, clayey, montmorillonitic, frigid
Olac-----	Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic
Old Camp-----	Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic
Osobb-----	Typic Durorthids, loamy-skeletal, mixed, mesic, shallow
Otomo-----	Typic Durorthids, loamy-skeletal, mixed, mesic, shallow
Packer-----	Argic Cryoborolls, loamy-skeletal, mixed
Parran-----	Typic Salorthids, fine, montmorillonitic, mesic
Patna-----	Typic Haplargids, coarse-loamy, mixed, mesic
Phing-----	Xerollic Paleargids, fine, montmorillonitic, mesic
Pickup-----	Aridic Argixerolls, clayey-skeletal, montmorillonitic, mesic
Pineval-----	Durixerollic Haplargids, loamy-skeletal, mixed, mesic
Pirouette-----	Typic Nadurargids, loamy-skeletal, mixed, mesic, shallow
Puett-----	Xeric Torriorthents, loamy, mixed (calcareous), mesic, shallow
Ragtown-----	Typic Torriorthents, fine, montmorillonitic (calcareous), mesic
Ravenswood-----	Typic Argixerolls, clayey-skeletal, montmorillonitic, frigid
Rawe-----	Typic Haplargids, clayey over loamy-skeletal, montmorillonitic, mesic
Rebel-----	Xerollic Camborthids, coarse-loamy, mixed, mesic
Rednik-----	Typic Haplargids, loamy-skeletal, mixed, mesic
Reluctan-----	Aridic Argixerolls, fine-loamy, mixed, frigid
Rezave-----	Lithic Natrargids, clayey, montmorillonitic, mesic
Ricert-----	Duric Natrargids, fine-loamy, mixed, mesic
Roca-----	Xerollic Haplargids, clayey-skeletal, montmorillonitic, frigid
Roic-----	Typic Torriorthents, loamy, mixed (calcareous), mesic, shallow
Ruhe-----	Typic Torripsamments, mixed, mesic, shallow
Rustigate-----	Oxyaquic Torriorthents, fine-loamy, mixed (calcareous), mesic
Settlement-----	Aeric Halaquepts, fine, montmorillonitic (calcareous), mesic
Singatse-----	Lithic Torriorthents, loamy-skeletal, mixed (calcareous), mesic
Slaw-----	Typic Torrifluvents, fine-silty, mixed (calcareous), mesic
Slocave-----	Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic, shallow
Soar-----	Xerollic Haplargids, loamy-skeletal, mixed, mesic, shallow
Sojur-----	Lithic Torriorthents, loamy-skeletal, mixed (calcareous), mesic
Stewval-----	Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic

TABLE 17.--CLASSIFICATION OF THE SOILS--Continued

Soil name	Family or higher taxonomic class
Stumble-----	Typic Torripsamments, mixed, mesic
Teguro-----	Lithic Argixerolls, loamy, mixed, frigid
Terlco-----	Typic Natrargids, fine-loamy, mixed, mesic
Theon-----	Lithic Haplargids, loamy-skeletal, mixed, mesic
Theriot-----	Lithic Torriorthents, loamy-skeletal, carbonatic, mesic
Tocan-----	Duric Haplargids, fine-loamy, mixed, mesic
Toulon-----	Typic Camborthids, sandy-skeletal, mixed, mesic
Trocken-----	Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic
Umberland-----	Aeric Halaquepts, fine, montmorillonitic (calcareous), mesic
Unsel-----	Duric Haplargids, fine-loamy, mixed, mesic
Uripnes-----	Typic Torriorthents, loamy-skeletal, mixed, nonacid, mesic, shallow
Vium-----	Lithic Haplargids, loamy-skeletal, mixed, mesic
Walti-----	Aridic Argixerolls, fine, montmorillonitic, frigid
Watcoopah-----	Durixerollic Haplargids, coarse-loamy, mixed, mesic
Welch-----	Cumulic Endoaquolls, fine-loamy, mixed, frigid
Wholan-----	Typic Camborthids, coarse-silty, mixed, mesic
Yerington-----	Typic Torriorthents, sandy, mixed, mesic
Yody-----	Haploxerollic Durargids, fine-loamy, mixed, mesic

## **RANGELAND PLANTS AND WOODLAND UNDERSTORY**

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## 100--BUDIHOL-CHILL-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BUDIHOL	CHILL	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	20-25	---	---	10-20	15-25
Sandberg bluegrass	POSE	2-8	2-5	---	---	5-10	---
Thurber needlegrass	STTH2	25-35	---	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	---	2-5	---	---	2-8	---
desert needlegrass	STSP3	---	---	---	40-50	---	---
needleandthread	STCO4	---	5-15	---	---	---	---
Anderson wolfberry	LYAN	---	---	---	2-8	---	---
Bailey greasewood	SAVEB	---	---	---	---	15-30	---
Nevada ephedra	EPNE	2-5	2-5	---	2-10	---	---
Wyoming big sagebrush	ARTRW	25-35	20-30	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
bud sagebrush	ARSP5	---	---	---	---	2-8	---
littleleaf horsebrush	TEGL	---	---	---	5-15	---	---
rabbitbrush	CHRY9	---	---	---	---	---	2-5
shadscale	ATCO	---	---	---	---	15-30	---
spiny hopsage	GRSP	2-8	10-25	---	5-15	---	10-20
winterfat	EULA5	---	2-5	---	---	---	---

Range site number	027XY007NV	027XY008NV	none	027XY047NV	027XY018NV	027XY029NV
Potential production (lb/acre):						
Favorable years	700	700		500	400	800
Normal years	500	500		350	250	500
Unfavorable years	300	300		200	100	300

## 102--BUDIHOL-MINNEHA-ROCK OUTCROP ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BUDIHOL	MINNEHA	ROCK OUTCROP	Inclusion 1	Inclusion 2
Canby bluegrass	POCA	---	X	---	---	X
Indian ricegrass	ORHY	5-15	X	---	20-25	X
Sandberg bluegrass	POSE	2-8	X	---	2-5	X
Thurber needlegrass	STTH2	25-35	X	---	---	X
bottlebrush squirreltail	SIHY	---	X	---	2-5	X
needleandthread	STCO4	---	---	---	5-15	---
arrowleaf balsamroot	BASA2	---	X	---	---	X
tapertip hawksbeard	CRAC2	---	X	---	---	X
Nevada ephedra	EPNE	2-5	---	---	2-5	---
Wyoming big sagebrush	ARTRW	25-35	X	---	20-30	X
ephedra	EPHED	---	X	---	---	X
spiny hopsage	GRSP	2-8	---	---	10-25	---
winterfat	EULA5	---	---	---	2-5	---
Utah juniper	JUOS	---	X	---	---	X
singleleaf pinyon	FIMO	---	X	---	---	X
Range site number		027XY007NV	027XY081NV	none	027XY008NV	027XY081NV
Potential production (lb/acre):						
Favorable years		700	500		700	500
Normal years		500	300		500	300
Unfavorable years		300	200		300	200

## 110--BIMMER-CHILL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BIMMER	CHILL	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	20-25	---	---	15-25	50-70
Sandberg bluegrass	POSE	5-10	2-5	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIRY	2-8	2-5	---	---	---	---
desert needlegrass	STSP3	---	---	---	40-50	---	---
needleandthread	STCO4	---	5-15	---	---	---	5-15
Anderson wolfberry	LYAN	---	---	---	2-8	---	---
Bailey greasewood	SAVEB	15-30	---	---	---	---	---
Nevada dalea	PSPO	---	---	---	---	---	0-5
Nevada ephedra	EPNE	---	2-5	---	2-10	---	---
Wyoming big sagebrush	ARTRW	---	20-30	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
bud sagebrush	ARSP5	2-8	---	---	---	---	---
fourwing saltbush	ATCA2	---	---	---	---	---	10-20
littleleaf horsebrush	TEGL	---	---	---	5-15	---	---
rabbitbrush	CHRY59	---	---	---	---	2-5	---
shadscale	ATCO	15-30	---	---	---	---	---
spiny hopsage	GRSP	---	10-25	---	5-15	10-20	2-5
winterfat	EULA5	---	2-5	---	---	---	2-8
Range site number		027XY018NV	027XY008NV	none	027XY047NV	027XY029NV	027XY009NV
Potential production (lb/acre):							
Favorable years		400	700		500	800	700
Normal years		250	500		350	500	450
Unfavorable years		100	300		200	300	250

## 120--NEMICO-MIRKWOOD-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		NEMICO	MIRKWOOD	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	25-35	5-15	---	15-25	5-15	5-10	20-30
Sandberg bluegrass	POSE	---	---	---	---	2-8	---	---
Thurber needlegrass	STTH2	---	---	---	---	25-35	---	---
bottlebrush squirreltail	SIHY	---	---	---	---	---	5-10	---
desert needlegrass	STSP3	2-5	40-60	---	2-10	---	---	---
galleta	HIJA	2-15	---	---	---	---	---	---
needleandthread	STCO4	---	---	---	---	---	---	5-15
globemallow	SPEAE	1-3	1-3	---	---	---	---	---
Anderson wolfberry	LYAN	---	2-5	---	---	---	---	---
Bailey greasewood	SAVEB	25-35	---	---	---	---	---	---
Nevada dalea	PAPO	---	---	---	---	---	---	2-8
Nevada ephedra	EPNE	2-5	2-5	---	2-5	2-5	5-10	---
Wyoming big sagebrush	ARTRW	---	---	---	---	25-35	---	---
bud sagebrush	ARSP5	---	---	---	2-8	---	---	---
burrobrush	HYMEN3	---	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	---	5-10	15-25
hairy horsebrush	TECO2	---	---	---	---	---	---	25-35
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20	2-5
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-20	---
shadscale	ATCO	15-25	20-35	---	30-40	---	---	---
spiny hopsage	GRSP	---	2-8	---	---	2-8	10-20	---
winterfat	EULA5	---	---	---	2-8	---	---	---

Range site number	027XY015NV	027XY017NV	none	027XY027NV	027XY007NV	027XY022NV	027XY023NV
Potential production (lb/acre):							
Favorable years	500	400		200	700	400	700
Normal years	350	200		100	500	200	500
Unfavorable years	200	100		50	300	50	300



## 130--BEDZEE-LOOMER-BEDWYR ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		BEDZEE	LOOMER	BEDWYR	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	---	---	10-20	15-30	20-25	---	---
Sandberg bluegrass	POSE	2-8	2-8	5-10	---	2-5	---	---
Thurber needlegrass	STTH2	20-35	20-35	---	---	---	---	---
bottlebrush squirreltail	SIHY	---	---	2-8	---	2-5	---	---
desert needlegrass	STSP3	2-5	2-5	---	---	---	---	---
needleandthread	STCO4	---	---	---	5-10	5-15	---	---
thickspike wheatgrass	AGDA	---	---	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---	---	---
wheatgrass	AGROP	---	---	---	5-15	---	---	---
Bailey greasewood	SAVEB	---	---	15-30	---	---	---	---
Lahontan sagebrush	ARTEM	30-35	30-35	---	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	15-25	---	---	---
bud sagebrush	ARSP5	---	---	2-8	---	---	---	---
fourwing saltbush	ATCA2	---	---	---	2-8	---	---	---
shadscale	ATCO	---	---	15-30	---	---	---	---
spiny hopsage	GRSP	2-5	2-5	---	5-10	10-25	---	---
winterfat	EULA5	---	---	---	---	2-5	---	---

Range site number	027XY079NV	027XY079NV	027XY018NV	027XY045NV	027XY008NV	none	none
Potential production (lb/acre):							
Favorable years	500	500	400	800	700		
Normal years	350	350	250	600	500		
Unfavorable years	200	200	100	400	300		

## 140--HAWSEY SAND, 2 TO 8 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		HAWSEY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	50-70	25-45	20-30	50-70
desert needlegrass	STSP3	---	2-8	---	---
needleandthread	STCO4	5-15	---	5-15	5-15
Bailey greasewood	SAVEB	---	20-30	---	---
Nevada dalea	PSPO	0-5	---	---	0-5
Nevada dalea	PAP0	---	---	2-8	---
bud sagebrush	ARSP5	---	2-8	---	---
fourwing saltbush	ATCA2	10-20	---	15-25	10-20
hairy horsebrush	TECO2	---	---	25-35	---
littleleaf horsebrush	TEGL	---	---	2-5	---
shadscale	ATCO	---	5-15	---	---
spiny hopsage	GRSP	2-5	---	---	2-5
winterfat	EULA5	2-8	2-8	---	2-8

Range site number	027XY009NV	027XY050NV	027XY023NV	027XY009NV
Potential production (lb/acre):				
Favorable years	700	500	700	700
Normal years	450	350	500	450
Unfavorable years	250	200	300	250

## 141--HAWSEY-ISOLDE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		HAWSEY	ISOLDE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	50-70	20-30	10-20	5-10	20-30
Sandberg bluegrass	POSE	---	---	5-10	---	---
bottlebrush squirreltail	SIEY	---	---	2-8	5-10	---
needleandthread	STCO4	5-15	5-15	---	---	5-15
Bailey greasewood	SAVEB	---	---	15-30	---	---
Nevada dalea	PSPO	0-5	---	---	---	---
Nevada dalea	PAP0	---	2-8	---	---	2-8
Nevada ephedra	EPNE	---	---	---	5-10	---
bud sagebrush	ARSP5	---	---	2-8	---	---
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	10-20	15-25	---	5-10	15-25
hairy horsebrush	TECO2	---	25-35	---	---	25-35
littleleaf horsebrush	TEGL	---	2-5	---	10-20	2-5
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
shadscale	ATCO	---	---	15-30	---	---
spiny hopsage	GRSP	2-5	---	---	10-20	---
winterfat	EULA5	2-8	---	---	---	---
Range site number		027XY009NV	027XY023NV	027XY018NV	027XY022NV	027XY023NV
Potential production (lb/acre):						
Favorable years		700	700	400	400	700
Normal years		450	500	250	200	500
Unfavorable years		250	300	100	50	300

## 142--HAWSEY-APPIAN-RUHE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		HAWSEY	APPIAN	RUHE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	50-70	10-20	50-70	50-70	---	---
Sandberg bluegrass	POSE	---	5-10	---	---	---	---
bottlebrush squirreltail	SIHY	---	2-8	---	---	---	---
inland saltgrass	DISPS2	---	---	---	---	2-10	---
needleandthread	STCO4	5-15	---	5-15	5-15	---	---
Bailey greasewood	SAVEB	---	15-30	---	---	---	---
Nevada dalea	PSPO	0-5	---	0-5	0-5	---	---
black greasewood	SAVE4	---	---	---	---	60-70	---
bud sagebrush	ARSP5	---	2-8	---	---	---	---
fourwing saltbush	ATCA2	10-20	---	10-20	10-20	---	---
seepweed	SUAED	---	---	---	---	2-8	---
shadscale	ATCO	---	15-30	---	---	2-10	---
spiny hopsage	GRSP	2-5	---	2-5	2-5	---	---
winterfat	EULA5	2-8	---	2-8	2-8	---	---
Range site number		027XY009NV	027XY018NV	027XY009NV	027XY009NV	027XY025NV	none
Potential production (lb/acre):							
Favorable years		700	400	700	700	500	
Normal years		450	250	450	450	350	
Unfavorable years		250	100	250	250	200	

## 143--HAWSEY-GAMGEE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		HAWSEY	GAMGEE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	50-70	25-35	50-70	25-35	20-30
desert needlegrass	STSP3	---	2-5	---	2-5	---
galleta	HIJA	---	2-15	---	2-15	---
needleandthread	STCO4	5-15	---	5-15	---	5-15
globemallow	SPHAE	---	1-3	---	1-3	---
Bailey greasewood	SAVEB	---	25-35	---	25-35	---
Nevada dalea	PSPO	0-5	---	0-5	---	---
Nevada dalea	PAPO	---	---	---	---	2-8
Nevada ephedra	EPNE	---	2-5	---	2-5	---
fourwing saltbush	ATCA2	10-20	---	10-20	---	15-25
hairy horsebrush	TECO2	---	---	---	---	25-35
littleleaf horsebrush	TEGL	---	---	---	---	2-5
shadscale	ATCO	---	15-25	---	15-25	---
spiny hopsage	GRSP	2-5	---	2-5	---	---
winterfat	EULA5	2-8	---	2-8	---	---
Range site number		027XY009NV	027XY015NV	027XY009NV	027XY015NV	027XY023NV
Potential production (lb/acre):						
Favorable years		700	500	700	500	700
Normal years		450	350	450	350	500
Unfavorable years		250	200	250	200	300

## 144--HAWSEY-THEON-PIROUETTE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		HAWSEY	THEON	PIROUETTE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	50-70	5-15	10-20	50-70	25-35	20-30	---
Sandberg bluegrass	POSE	---	---	5-10	---	---	---	---
bottlebrush squirreltail	SIHY	---	2-5	2-8	---	---	---	---
desert needlegrass	STSP3	---	2-8	---	---	2-5	---	---
galleta	HIJA	---	---	---	---	2-15	---	---
needleandthread	STCO4	5-15	---	---	5-15	---	5-15	---
globemallow	SPHAE	---	---	---	---	1-3	---	---
Bailey greasewood	SAVEB	---	15-30	15-30	---	25-35	---	---
Nevada dalea	PSPO	0-5	---	---	0-5	---	---	---
Nevada dalea	PAP0	---	---	---	---	---	2-8	---
Nevada ephedra	EPNE	---	---	---	---	2-5	---	---
bud sagebrush	ARSP5	---	2-8	2-8	---	---	---	---
fourwing saltbush	ATCA2	10-20	---	---	10-20	---	15-25	---
hairy horsebrush	TECO2	---	---	---	---	---	25-35	---
littleleaf horsebrush	TEGL	---	---	---	---	---	2-5	---
shadscale	ATCO	---	15-35	15-30	---	15-25	---	---
spiny hopsage	GRSP	2-5	---	---	2-5	---	---	---
winterfat	EULAS	2-8	---	---	2-8	---	---	---
Range site number								
		027XY009NV	027XY019NV	027XY018NV	027XY009NV	027XY015NV	027XY023NV	none
Potential production (lb/acre):								
Favorable years		700	300	400	700	500	700	
Normal years		450	175	250	450	350	500	
Unfavorable years		250	50	100	250	200	300	

## 146--HAWSEY-JUVA ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		HAWSEY	JUVA	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	50-70	10-20	5-10	10-20
Sandberg bluegrass	POSE	---	5-10	---	5-10
bottlebrush squirreltail	SIHY	---	2-8	5-10	2-8
needleandthread	STCO4	5-15	---	---	---
Bailey greasewood	SAVEB	---	15-30	---	15-30
Nevada dalea	PSPO	0-5	---	---	---
Nevada ephedra	EPNE	---	---	5-10	---
bud sagebrush	ARSP5	---	2-8	---	2-8
burrobrush	HYMEN3	---	---	5-10	---
fourwing saltbush	ATCA2	10-20	---	5-10	---
littleleaf horsebrush	TEGL	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	10-20	---
shadscale	ATCO	---	15-30	---	15-30
spiny hopsage	GRSP	2-5	---	10-20	---
winterfat	EULA5	2-8	---	---	---
Range site number		027XY009NV	027XY018NV	027XY022NV	027XY018NV
Potential production (lb/acre):					
Favorable years		700	400	400	400
Normal years		450	250	200	250
Unfavorable years		250	100	50	100

## 147--HAWSEY-CELETON-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		HAWSEY	CELETON	BLUEWING	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	50-70	15-25	25-45	25-45	15-25
desert needlegrass	STSP3	---	2-10	2-8	2-8	2-10
needleandthread	STCO4	5-15	---	---	---	---
Bailey greasewood	SAVEB	---	---	20-30	20-30	---
Nevada dalea	PSPO	0-5	---	---	---	---
Nevada ephedra	EPNE	---	2-5	---	---	2-5
bud sagebrush	ARSP5	---	2-8	2-8	2-8	2-8
fourwing saltbush	ATCA2	10-20	---	---	---	---
shadscale	ATCO	---	30-40	5-15	5-15	30-40
spiny hopsage	GRSP	2-5	---	---	---	---
winterfat	EULA5	2-8	2-8	2-8	2-8	2-8

Range site number	027XY009NV	027XY027NV	027XY050NV	027XY050NV	027XY027NV
Potential production (lb/acre):					
Favorable years	700	200	500	500	200
Normal years	450	100	350	350	100
Unfavorable years	250	50	200	200	50



## 150--BUCKAROO-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BUCKAROO	BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	25-45	5-10	20-30	10-20
Sandberg bluegrass	POSE	5-10	---	---	---	5-10
bottlebrush squirreltail	SIHY	2-8	---	5-10	---	2-8
desert needlegrass	STSP3	---	2-8	---	---	---
galleta	HIJA	---	---	---	2-8	---
sand dropseed	SPCR	---	---	---	2-8	---
globemallow	SPHAE	---	---	---	1-3	---
Bailey greasewood	SAVEE	15-30	20-30	---	---	15-30
Nevada ephedra	EPNE	---	---	5-10	---	---
bud sagebrush	ARSP5	2-8	2-8	---	2-8	2-8
burrobrush	HYMEN3	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	5-10	20-30	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---
rubber rabbitbrush	CENA2	---	---	10-20	---	---
shadscale	ATCO	15-30	5-15	---	---	15-30
spiny hopsage	GRSP	---	---	10-20	2-5	---
winterfat	EULA5	---	2-8	---	10-20	---
Range site number		027XY018NV	027XY050NV	027XY022NV	029XY046NV	027XY018NV
Potential production (lb/acre):						
Favorable years		400	500	400	500	400
Normal years		250	350	200	400	250
Unfavorable years		100	200	50	300	100

## 152--BUCKAROO-WATOOPAH-REZAVE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BUCKAROO	WATOOPAH	REZAVE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	15-30	10-20	15-25	---	5-15
Sandberg bluegrass	POSE	5-10	---	5-10	---	---	2-8
Thurber needlegrass	STTH2	---	---	---	---	---	25-35
bottlebrush squirreltail	SIHY	2-8	---	2-8	---	---	---
desert needlegrass	STSP3	---	---	---	2-10	---	---
needleandthread	STCO4	---	5-10	---	---	---	---
thickspike wheatgrass	AGDA	---	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---	---
wheatgrass	AGROP	---	5-15	---	---	---	---
Bailey greasewood	SAVEB	15-30	---	15-30	---	---	---
Nevada ephedra	EPNE	---	---	---	2-5	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	---	25-35
basin big sagebrush	ARTRT	---	15-25	---	---	---	---
bud sagebrush	ARSP5	2-8	---	2-8	2-8	---	---
fourwing saltbush	ATCA2	---	2-8	---	---	---	---
shadscale	ATCO	15-30	---	15-30	30-40	---	---
spiny hopsage	GRSP	---	5-10	---	---	---	2-8
winterfat	EULA5	---	---	---	2-8	---	---
Range site number		027XY018NV	027XY045NV	027XY018NV	027XY027NV	none	027XY007NV
Potential production (lb/acre):							
Favorable years		400	800	400	200		700
Normal years		250	600	250	100		500
Unfavorable years		100	400	100	50		300

## 153--BUCKAROO-REDNIK-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		BUCKAROO	REDNIK	BLUEWING	Inclusion 1
Indian ricegrass	ORHY	10-20	10-20	5-10	20-25
Sandberg bluegrass	POSE	5-10	5-10	---	2-5
bottlebrush squirreltail	SIHY	2-8	2-8	5-10	2-5
needleandthread	STCO4	---	---	---	5-15
Bailey greasewood	SAVEB	15-30	15-30	---	---
Nevada ephedra	EPNE	---	---	5-10	2-5
Wyoming big sagebrush	ARTRW	---	---	---	20-30
bud sagebrush	ARSP5	2-8	2-8	---	---
burrobrush	HYMEN3	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	10-20	---
shadscale	ATCO	15-30	15-30	---	---
spiny hopsage	GRSP	---	---	10-20	10-25
winterfat	EULA5	---	---	---	2-5
Range site number		027XY018NV	027XY018NV	027XY022NV	027XY008NV
Potential production (lb/acre):					
Favorable years		400	400	400	700
Normal years		250	250	200	500
Unfavorable years		100	100	50	300

## 154--BUCKAROO-REDNIK-GENEGRAF ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BUCKAROO	REDNIK	GENEGRAF	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	10-20	10-20	10-20	10-20	5-10	10-20
Sandberg bluegrass	POSE	5-10	5-10	5-10	5-10	---	5-10
bottlebrush squirreltail	SINY	2-8	2-8	2-8	2-8	5-10	2-8
Bailey greasewood	SAVEE	15-30	15-30	15-30	15-30	---	15-30
Nevada ephedra	EPNE	---	---	---	---	5-10	---
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8	---	2-8
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	15-30	15-30	15-30	15-30	---	15-30
spiny hopsage	GRSP	---	---	---	---	10-20	---

Range site number	027XY018NV	027XY018NV	027XY018NV	027XY018NV	027XY022NV	027XY018NV
Potential production (lb/acre):						
Favorable years	400	400	400	400	400	400
Normal years	250	250	250	250	200	250
Unfavorable years	100	100	100	100	50	100

## 155--BUCKAROO-GENEGRAF-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BUCKAROO	GENEGRAF	PINEVAL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	10-20	10-20	20-25	5-10	15-30	15-25
Sandberg bluegrass	POSE	5-10	5-10	2-5	---	2-15	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-8	2-8	2-5	5-10	2-8	---
needleandthread	STCO4	---	---	5-15	---	---	---
Bailey greasewood	SAVEB	15-30	15-30	---	---	---	---
Nevada ephedra	EPNE	---	---	2-5	5-10	---	---
Wyoming big sagebrush	ARTRW	---	---	20-30	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
bud sagebrush	ARSP5	2-8	2-8	---	---	15-25	---
burrobrush	HYMEN3	---	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---	---
rabbitbrush	CHRY59	---	---	---	---	---	2-5
rubber rabbitbrush	CHNA2	---	---	---	10-20	---	---
shadscale	ATCO	15-30	15-30	---	---	20-35	---
spiny hopsage	GRSP	---	---	10-25	10-20	---	10-20
winterfat	EULA5	---	---	2-5	---	5-10	---

Range site number	027XY018NV	027XY018NV	027XY008NV	027XY022NV	027XY013NV	027XY029NV
Potential production (lb/acre):						
Favorable years	400	400	700	400	600	800
Normal years	250	250	500	200	450	500
Unfavorable years	100	100	300	50	250	300

## 158--BUCKAROO-CELETON-WHOLAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BUCKAROO	CELETON	WHOLAN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	15-25	40-50	10-20	15-25	15-25
Sandberg bluegrass	POSE	5-10	---	---	5-10	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-8	---	2-5	2-8	---	---
desert needlegrass	STSP3	---	2-10	---	---	2-10	---
needleandthread	STCO4	---	---	5-15	---	---	---
globemallow	SPHAE	---	---	2-5	---	---	---
Bailey greasewood	SAVEB	15-30	---	---	15-30	---	---
Nevada ephedra	EPNE	---	2-5	---	---	2-5	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
bud sagebrush	ARSP5	2-8	2-8	5-15	2-8	2-8	---
rabbithrush	CHRY9	---	---	---	---	---	2-5
shadscale	ATCO	15-30	30-40	---	15-30	30-40	---
spiny hopsage	GRSP	---	---	---	---	---	10-20
winterfat	EULA5	---	2-8	25-30	---	2-8	---
Range site number		027XY018NV	027XY027NV	027XY014NV	027XY018NV	027XY027NV	027XY029NV
Potential production (lb/acre):							
Favorable years		400	200	700	400	200	800
Normal years		250	100	500	250	100	500
Unfavorable years		100	50	350	100	50	300

## 159--BUCKAROO-GENEGRAF ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		BUCKAROO	GENEGRAF	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	10-20	10-20	10-20	---
Sandberg bluegrass	POSE	5-10	5-10	5-10	5-10
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	20-50
onion	ALLIU	---	---	---	1-3
specklepod loco milkvetch	ASLE8	---	---	---	2-5
Bailey greasewood	SAVEB	15-30	15-30	15-30	---
Wyoming big sagebrush	ARTRW	---	---	---	1-10
bud sagebrush	ARSP5	2-8	2-8	2-8	---
littleleaf horsebrush	TEGL	---	---	---	2-5
low sagebrush	ARAR8	---	---	---	5-15
shadscale	ATCO	15-30	15-30	15-30	---
spiny hopsage	GRSP	---	---	---	2-5
Range site number		027XY018NV	027XY018NV	027XY018NV	026XY027NV
Potential production (lb/acre):					
Favorable years		400	400	400	400
Normal years		250	250	250	300
Unfavorable years		100	100	100	200

## 160--SINGATSE-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		SINGATSE	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	---	5-15	5-15	5-15
Sandberg bluegrass	POSE	---	---	---	---	2-8
Thurber needlegrass	STTH2	---	---	---	---	25-35
bottlebrush squirreltail	SIRY	---	---	2-5	---	---
desert needlegrass	STSP3	2-10	---	2-8	40-60	---
globemallow	SPHAE	---	---	---	1-3	---
Anderson wolfberry	LYAN	---	---	---	2-5	---
Bailey greasewood	SAVEB	---	---	15-30	---	---
Nevada ephedra	EPNE	2-5	---	---	2-5	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	25-35
bud sagebrush	ARSP5	2-8	---	2-8	---	---
shadscale	ATCO	30-40	---	15-35	20-35	---
spiny hopsage	GRSP	---	---	---	2-8	2-8
winterfat	EULA5	2-8	---	---	---	---
Range site number		027XY027NV	none	027XY019NV	027XY017NV	027XY007NV
Potential production (lb/acre):						
Favorable years		200		300	400	700
Normal years		100		175	200	500
Unfavorable years		50		50	100	300



## 161--SINGATSE-URIPNES-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SINGATSE	URIPNES	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	---	---	15-25	5-10	25-45
bottlebrush squirreltail	SIHY	---	---	---	---	5-10	---
desert needlegrass	STSP3	2-10	40-50	---	2-10	---	2-8
Anderson wolfberry	LYAN	---	2-8	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	---	---	20-30
Nevada ephedra	EPNE	2-5	2-10	---	2-5	5-10	---
bud sagebrush	ARSP5	2-8	---	---	2-8	---	2-8
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	5-15	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	30-40	---	---	30-40	---	5-15
spiny hopsage	GRSP	---	5-15	---	---	10-20	---
winterfat	EULA5	2-8	---	---	2-8	---	2-8
Range site number		027XY027NV	027XY047NV	none	027XY027NV	027XY022NV	027XY050NV
Potential production (lb/acre):							
Favorable years		200	500		200	400	500
Normal years		100	350		100	200	350
Unfavorable years		50	200		50	50	200

## 162--SINGATSE-THEON-REZAVE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SINGATSE	THEON	REZAVE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-25	5-15	10-20	---	5-15	5-10	15-25
Sandberg bluegrass	POSE	---	---	5-10	---	2-8	---	---
Thurber needlegrass	STTH2	---	---	---	---	25-35	---	---
bottlebrush squirreltail	SIHY	---	2-5	2-8	---	---	5-10	---
desert needlegrass	STSP3	2-10	2-8	---	---	---	---	2-10
Bailey greasewood	SAVEB	---	15-30	15-30	---	---	---	---
Nevada ephedra	EPNE	2-5	---	---	---	2-5	5-10	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	25-35	---	---
bud sagebrush	ARSP5	2-8	2-8	2-8	---	---	---	2-8
burrobrush	HYMEN3	---	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-20	---
shadscale	ATCO	30-40	15-35	15-30	---	---	---	30-40
spiny hopsage	GRSP	---	---	---	---	2-8	10-20	---
winterfat	EULA5	2-8	---	---	---	---	---	2-8

Range site number	027XY027NV	027XY019NV	027XY018NV	none	027XY007NV	027XY022NV	027XY027NV
Potential production (lb/acre):							
Favorable years	200	300	400		700	400	200
Normal years	100	175	250		500	200	100
Unfavorable years	50	50	100		300	50	50

## 164--SINGATSE-LOOMER ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SINGATSE	LOOMER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-25	---	10-20	---	5-15	---
Sandberg bluegrass	POSE	---	2-8	5-10	2-8	---	---
Thurber needlegrass	STH2	---	20-35	---	20-35	---	---
bottlebrush squirreltail	SIHY	---	---	2-8	---	2-5	---
desert needlegrass	STSP3	2-10	2-5	---	2-5	2-8	---
Bailey greasewood	SAVEB	---	---	15-30	---	15-30	---
Lahontan sagebrush	ARTEM	---	30-35	---	30-35	---	---
Nevada ephedra	EPNE	2-5	---	---	---	---	---
bud sagebrush	ARSP5	2-8	---	2-8	---	2-8	---
shadscale	ATCO	30-40	---	15-30	---	15-35	---
spiny hopsage	GRSP	---	2-5	---	2-5	---	---
winterfat	EULA5	2-8	---	---	---	---	---
Range site number		027XY027NV	027XY079NV	027XY018NV	027XY079NV	027XY019NV	none
Potential production (lb/acre):							
Favorable years		200	500	400	500	300	
Normal years		100	350	250	350	175	
Unfavorable years		50	200	100	200	50	

## 170--ISOLDE-DUNE LAND-PIROUETTE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ISOLDE	DUNE LAND	PIROUETTE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	20-30	---	10-20	50-70	15-25	---
Sandberg bluegrass	POSE	---	---	5-10	---	---	---
bottlebrush squirreltail	SINY	---	---	2-8	---	---	---
desert needlegrass	STSP3	---	---	---	---	2-10	---
needleandthread	STCO4	5-15	---	---	5-15	---	---
Bailey greasewood	SAVEB	---	---	15-30	---	---	---
Nevada dalea	PSPO	---	---	---	0-5	---	---
Nevada dalea	PAP0	2-8	---	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	2-5	---
bud sagebrush	ARSP5	---	---	2-8	---	2-8	---
fourwing saltbush	ATCA2	15-25	---	---	10-20	---	---
hairy horsebrush	TECO2	25-35	---	---	---	---	---
littleleaf horsebrush	TEGL	2-5	---	---	---	---	---
shadscale	ATCO	---	---	15-30	---	30-40	---
spiny hopsage	GRSP	---	---	---	2-5	---	---
winterfat	EULA5	---	---	---	2-8	2-8	---
Range site number		027XY023NV	none	027XY018NV	027XY009NV	027XY027NV	none
Potential production (lb/acre):							
Favorable years		700		400	700	200	
Normal years		500		250	450	100	
Unfavorable years		300		100	250	50	

## 171--ISOLDE-PARRAN-APPIAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ISOLDE	PARRAN	APPIAN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	20-30	---	10-15	---	20-30	50-70
bottlebrush squirreltail	SIHY	---	---	5-10	---	---	---
inland saltgrass	DISPS2	2-5	2-10	2-5	---	2-5	---
needleandthread	STCO4	---	---	---	---	---	5-15
Bailey greasewood	SAVEB	---	---	0-5	---	---	---
Nevada dalea	PSPO	---	---	---	---	---	0-5
black greasewood	SAVE4	30-50	60-70	20-30	---	30-50	---
bud sagebrush	ARSP5	---	---	2-5	---	---	---
fourwing saltbush	ATCA2	2-5	---	---	---	2-5	10-20
seepweed	SUAED	---	2-8	---	---	---	---
shadscale	ATCO	2-5	2-10	20-35	---	2-5	---
spiny hopsage	GRSP	---	---	---	---	---	2-5
winterfat	EULA5	---	---	---	---	---	2-8
Range site number		027XY016NV	027XY025NV	027XY024NV	none	027XY016NV	027XY009NV
Potential production (lb/acre):							
Favorable years		500	500	500		500	700
Normal years		300	350	350		300	450
Unfavorable years		150	200	150		150	250

## 172--ISOLDE-PIROUETTE-HAWSLEY ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ISOLDE	PIROUETTE	HAWSLEY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	20-30	10-20	50-70	15-25	20-30	5-15
Sandberg bluegrass	POSE	---	5-10	---	---	---	---
bottlebrush squirreltail	SIHY	---	2-8	---	---	---	2-5
desert needlegrass	STSP3	---	---	---	2-10	---	2-8
inland saltgrass	DISPS2	---	---	---	---	2-5	---
needleandthread	STCO4	5-15	---	5-15	---	---	---
Bailey greasewood	SAVEB	---	15-30	---	---	---	15-30
Nevada dalea	PSPO	---	---	0-5	---	---	---
Nevada dalea	PAP0	2-8	---	---	---	---	---
Nevada ephedra	EPNE	---	---	---	2-5	---	---
black greasewood	SAVE4	---	---	---	---	30-50	---
bud sagebrush	ARSP5	---	2-8	---	2-8	---	2-8
fourwing saltbush	ATCA2	15-25	---	10-20	---	2-5	---
hairy horsebrush	TECO2	25-35	---	---	---	---	---
littleleaf horsebrush	TEGL	2-5	---	---	---	---	---
shadscale	ATCO	---	15-30	---	30-40	2-5	15-35
spiny hopsage	GRSP	---	---	2-5	---	---	---
winterfat	EULA5	---	---	2-8	2-8	---	---
Range site number							
		027XY023NV	027XY018NV	027XY009NV	027XY027NV	027XY016NV	027XY019NV
Potential production (lb/acre):							
Favorable years		700	400	700	200	500	300
Normal years		500	250	450	100	300	175
Unfavorable years		300	100	250	50	150	50

173--ISOLDE FINE SAND, SLIGHTLY SALINE, 2 TO 15 PERCENT SLOP ES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions	
		Soil name or Inclusion number--	
		ISOLDE	PIROUETTE
Indian ricegrass	ORHY	20-30	50-70
inland saltgrass	DISPS2	2-5	---
needleandthread	STCO4	---	5-15
Nevada dalea	PSP0	---	0-5
black greasewood	SAVE4	30-50	---
fourwing saltbush	ATCA2	2-5	10-20
shadscale	ATCO	2-5	---
spiny hopsage	GRSP	---	2-5
winterfat	EULA5	---	2-8
Range site number		027XY016NV	027XY009NV
Potential production (lb/acre):			
Favorable years		500	700
Normal years		300	450
Unfavorable years		150	250

## 174--ISOLDE-RAGTOWN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		ISOLDE	RAGTOWN	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	20-30	---	---	---
inland saltgrass	DISPS2	2-5	2-10	2-10	---
black greasewood	SAVE4	30-50	60-70	60-70	---
fourwing saltbush	ATCA2	2-5	---	---	---
seepweed	SUAED	---	2-8	2-8	---
shadscale	ATCO	2-5	2-10	2-10	---
Range site number		027XY016NV	027XY025NV	027XY025NV	none
Potential production (lb/acre):					
Favorable years		500	500	500	
Normal years		300	350	350	
Unfavorable years		150	200	200	



## 180--BLUEWING-INMO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BLUEWING	INMO	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	25-45	15-30	10-20	5-10	50-70
Sandberg bluegrass	POSE	---	2-15	5-10	---	---
bottlebrush squirreltail	SIHY	---	2-8	2-8	5-10	---
desert needlegrass	STSP3	2-8	---	---	---	---
needleandthread	STCO4	---	---	---	---	5-15
Bailey greasewood	SAVEB	20-30	---	15-30	---	---
Nevada dalea	PSPO	---	---	---	---	0-5
Nevada ephedra	EPNE	---	---	---	5-10	---
bud sagebrush	ARSP5	2-8	15-25	2-8	---	---
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	5-10	10-20
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
shadscale	ATCO	5-15	20-35	15-30	---	---
spiny hopsage	GRSP	---	---	---	10-20	2-5
winterfat	EULA5	2-8	5-10	---	---	2-8

Range site number	027XY050NV	027XY013NV	027XY018NV	027XY022NV	027XY009NV
Potential production (lb/acre):					
Favorable years	500	600	400	400	700
Normal years	350	450	250	200	450
Unfavorable years	200	250	100	50	250

## 181--BLUEWING VERY GRAVELLY LOAMY SAND, 2 TO 8 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions	
		Soil name or Inclusion number--	
		BLUEWING	Inclusion 1
Indian ricegrass	ORHY	5-10	25-45
bottlebrush squirreltail	SIRY	5-10	---
desert needlegrass	STSP3	---	2-8
Bailey greasewood	SAVEB	---	20-30
Nevada ephedra	EPNE	5-10	---
bud sagebrush	ARSF5	---	2-8
burrobrush	HYMEN3	5-10	---
fourwing saltbush	ATCA2	5-10	---
littleleaf horsebrush	TEGL	10-20	---
rubber rabbitbrush	CHNA2	10-20	---
shadscale	ATCO	---	5-15
spiny hopsage	GRSP	10-20	---
winterfat	EULA5	---	2-8

Range site number	027XY022NV	027XY050NV
Potential production (lb/acre):		
Favorable years	400	500
Normal years	200	350
Unfavorable years	50	200

## 184--BLUEWING-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BLUEWING	BLUEWING	PINEVAL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	5-10	25-45	20-25	20-30	10-15	40-50
Sandberg bluegrass	POSE	---	---	2-5	---	---	---
bottlebrush squirreltail	SIHY	5-10	---	2-5	---	5-10	2-5
desert needlegrass	STSP3	---	2-8	---	---	---	---
inland saltgrass	DISPS2	---	---	---	2-5	2-5	---
needleandthread	STCO4	---	---	5-15	---	---	5-15
globemallow	SPHAE	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	---	20-30	---	---	0-5	---
Nevada ephedra	EPNE	5-10	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	---	20-30	---	---	---
black greasewood	SAVE4	---	---	---	30-50	20-30	---
bud sagebrush	ARSP5	---	2-8	---	---	2-5	5-15
burrobrush	HYMEN3	5-10	---	---	---	---	---
fourwing saltbush	ATCA2	5-10	---	---	2-5	---	---
littleleaf horsebrush	TEGL	10-20	---	---	---	---	---
rubber rabbitbrush	CHNA2	10-20	---	---	---	---	---
shadscale	ATCO	---	5-15	---	2-5	20-35	---
spiny hopsage	GRSP	10-20	---	10-25	---	---	---
winterfat	EULA5	---	2-8	2-5	---	---	25-30
Range site number		027XY022NV	027XY050NV	027XY008NV	027XY016NV	027XY024NV	027XY014NV
Potential production (lb/acre):							
Favorable years		400	500	700	500	500	700
Normal years		200	350	500	300	350	500
Unfavorable years		50	200	300	150	150	350

## 185--BLUEWING-TOULON-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BLUEWING	TOULON	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	25-45	10-20	---	5-10	10-15	10-20
Sandberg bluegrass	POSE	---	5-10	---	---	---	5-10
bottlebrush squirreltail	SIHY	---	2-8	---	5-10	5-10	2-8
desert needlegrass	STSP3	2-8	---	---	---	---	---
inland saltgrass	DISPS2	---	---	---	---	2-5	---
Bailey greasewood	SAVEB	20-30	15-30	---	---	0-5	15-30
Nevada ephedra	EPNE	---	---	---	5-10	---	---
black greasewood	SAVE4	---	---	---	---	20-30	---
bud sagebrush	ARSP5	2-8	2-8	---	---	2-5	2-8
burrobrush	KYMEN3	---	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---	---
shadscale	ATCO	5-15	15-30	---	---	20-35	15-30
spiny hopsage	GRSP	---	---	---	10-20	---	---
winterfat	EULA5	2-8	---	---	---	---	---
Range site number		027XY050NV	027XY018NV	none	027XY022NV	027XY024NV	027XY018NV
Potential production (lb/acre):							
Favorable years		500	400		400	500	400
Normal years		350	250		200	350	250
Unfavorable years		200	100		50	150	100

## 186--BLUEWING-HAWSLEY ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		BLUEWING	HAWSLEY	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	25-45	50-70	10-20	50-70
Sandberg bluegrass	POSE	---	---	5-10	---
bottlebrush squirreltail	SIHY	---	---	2-8	---
desert needlegrass	STSP3	2-8	---	---	---
needleandthread	STCO4	---	5-15	---	5-15
Bailey greasewood	SAVEB	20-30	---	15-30	---
Nevada dalea	PSP0	---	0-5	---	0-5
bud sagebrush	ARSP5	2-8	---	2-8	---
fourwing saltbush	ATCA2	---	10-20	---	10-20
shadscale	ATCO	5-15	---	15-30	---
spiny hopsage	GRSP	---	2-5	---	2-5
winterfat	EULA5	2-8	2-8	---	2-8
Range site number		027XY050NV	027XY009NV	027XY018NV	027XY009NV
Potential production (lb/acre):					
Favorable years		500	700	400	700
Normal years		300	450	250	450
Unfavorable years		250	250	100	250

## 190--THEON-OLD CAMP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		THEON	OLD CAMP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	5-15	5-15	---	15-25	25-35
Sandberg bluegrass	POSE	---	2-8	---	---	---
Thurber needlegrass	STTH2	---	25-35	---	---	---
bottlebrush squirreltail	SIBY	2-5	---	---	---	---
desert needlegrass	STSP3	2-8	---	---	2-10	2-5
galleta	HIJA	---	---	---	---	2-15
globemallow	SPHAE	---	---	---	---	1-3
Bailey greasewood	SAVEB	15-30	---	---	---	25-35
Nevada ephedra	EPNE	---	2-5	---	2-5	2-5
Wyoming big sagebrush	ARTRW	---	25-35	---	---	---
bud sagebrush	ARSP5	2-8	---	---	2-8	---
shadscale	ATCO	15-35	---	---	30-40	15-25
spiny hopsage	GRSP	---	2-8	---	---	---
winterfat	EULA5	---	---	---	2-8	---

Range site number	027XY019NV	027XY007NV	none	027XY027NV	027XY015NV
Potential production (lb/acre):					
Favorable years	300	700		200	500
Normal years	175	500		100	350
Unfavorable years	50	300		50	200

## 191--THEON-SINGATSE-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		THEON	SINGATSE	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-15	15-25	---	5-15	25-35	20-30	5-10
Sandberg bluegrass	POSE	---	---	---	2-8	---	---	---
Thurber needlegrass	STTH2	---	---	---	25-35	---	---	---
bottlebrush squirreltail	SIHY	2-5	---	---	---	---	---	5-10
desert needlegrass	STSP3	2-8	2-10	---	---	2-5	---	---
galleta	HIJA	---	---	---	---	2-15	---	---
needleandthread	STCO4	---	---	---	---	---	5-15	---
globemallow	SPHAE	---	---	---	---	1-3	---	---
Bailey greasewood	SAVEB	15-30	---	---	---	25-35	---	---
Nevada dalea	PAPQ	---	---	---	---	---	2-8	---
Nevada spinedra	EPNE	---	2-5	---	2-5	2-5	---	5-10
Wyoming big sagebrush	ARTRW	---	---	---	25-35	---	---	---
bud sagebrush	ARSF5	2-8	2-8	---	---	---	---	---
burrobrush	HYMEN3	---	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	---	15-25	5-10
hairy horsebrush	TECO2	---	---	---	---	---	25-35	---
littleleaf horsebrush	TEGL	---	---	---	---	---	2-5	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	---	---	10-20
shadscale	ATCO	15-35	30-40	---	---	15-25	---	---
spiny hopsage	GRSP	---	---	---	2-8	---	---	10-20
winterfat	EULA5	---	2-8	---	---	---	---	---
Range site number		027XY019NV	027XY027NV	none	027XY007NV	027XY015NV	027XY023NV	027XY022NV
Potential production (lb/acre):								
Favorable years		300	200		700	500	700	400
Normal years		175	100		500	350	500	200
Unfavorable years		50	50		300	200	300	50

## 192--THEON VERY GRAVELLY SANDY LOAM, 8 TO 30 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		THEON	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-15	5-15	---	50-70	20-30
bottlebrush squirreltail	SIHY	2-5	2-5	---	---	---
desert needlegrass	STSP3	2-8	2-8	---	---	---
needleandthread	STCO4	---	---	---	5-15	5-15
Bailey greasewood	SAVEB	15-30	15-30	---	---	---
Nevada dalea	PSPO	---	---	---	0-5	---
Nevada dalea	PAPO	---	---	---	---	2-8
bud sagebrush	ARSP5	2-8	2-8	---	---	---
fourwing saltbush	ATCA2	---	---	---	10-20	15-25
hairy horsebrush	TECO2	---	---	---	---	25-35
littleleaf horsebrush	TEGL	---	---	---	---	2-5
shadscale	ATCO	15-35	15-35	---	---	---
spiny hopsage	GRSP	---	---	---	2-5	---
winterfat	EULA5	---	---	---	2-8	---
Range site number		027XY019NV	027XY019NV	none	027XY009NV	027XY023NV
Potential production (lb/acre):						
Favorable years		300	300		700	700
Normal years		175	175		450	500
Unfavorable years		50	50		250	300



## 193--THEON-MIRKWOOD-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		THEON	MIRKWOOD	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-15	---	15-25	5-15	5-10
Sandberg bluegrass	POSE	---	---	---	---	2-8	---
Thurber needlegrass	STTH2	---	---	---	---	25-35	---
bottlebrush squirreltail	SIHY	2-5	---	---	---	---	5-10
desert needlegrass	STSP3	2-8	40-60	---	2-10	---	---
globemallow	SPHAE	---	1-3	---	---	---	---
Anderson wolfberry	LYAN	---	2-5	---	---	---	---
Bailey greasewood	SAVEB	15-30	---	---	---	---	---
Nevada ephedra	EPNE	---	2-5	---	2-5	2-5	5-10
Wyoming big sagebrush	ARTRW	---	---	---	---	25-35	---
bud sagebrush	ARSP5	2-8	---	---	2-8	---	---
burrobrush	HYMEN3	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-20
shadscale	ATCO	15-35	20-35	---	30-40	---	---
spiny hopsage	GRSP	---	2-8	---	---	2-8	10-20
winterfat	EULA5	---	---	---	2-8	---	---
Range site number		027XY019NV	027XY017NV	none	027XY027NV	027XY007NV	027XY022NV
Potential production (lb/acre):							
Favorable years		300	400		200	700	400
Normal years		175	200		100	500	200
Unfavorable years		50	100		50	300	50

## 194--THEON-HOOPLITE-SINGATSE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		THEON	HOOPLITE	SINGATSE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	5-15	5-15	15-25	5-15	10-20	5-10
Sandberg bluegrass	POSE	---	2-8	---	2-8	5-10	---
Thurber needlegrass	STTH2	---	30-40	---	25-35	---	---
bottlebrush squirreltail	SINY	2-5	---	---	---	2-8	2-5
desert needlegrass	STSP3	2-8	---	2-10	---	---	2-8
galleta	HIJA	---	---	---	---	---	5-15
Bailey greasewood	SAVEB	15-30	---	---	---	15-30	5-15
Nevada ephedra	EPNE	---	---	2-5	2-5	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	25-35	---	---
black sagebrush	ARARN	---	25-35	---	---	---	---
bud sagebrush	ARSP5	2-8	---	2-8	---	2-8	5-10
shadscale	ATCO	15-35	---	30-40	---	15-30	25-35
spiny hopsage	GRSP	---	---	---	2-8	---	---
winterfat	EULAS	---	---	2-8	---	---	5-10

Range site number	027XY019NV	027XY032NV	027XY027NV	027XY007NV	027XY018NV	029XY022NV
Potential production (lb/acre):						
Favorable years	300	500	200	700	400	400
Normal years	175	300	100	500	250	250
Unfavorable years	50	200	50	300	100	100

## 199--THEON-OLAC-SINGATSE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		THEON	OLAC	SINGATSE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	---	15-25	10-20	---	---
Sandberg bluegrass	POSE	---	2-8	---	5-10	---	---
Thurber needlegrass	STTH2	---	20-35	---	---	---	---
bottlebrush squirreltail	SIHY	2-5	---	---	2-8	---	---
desert needlegrass	STSP3	2-8	2-5	2-10	---	---	---
Bailey greasewood	SAVEB	15-30	---	---	15-30	---	---
Lahontan sagebrush	ARTEM	---	30-35	---	---	---	---
Nevada ephedra	EPNE	---	---	2-5	---	---	---
bud sagebrush	ARSP5	2-8	---	2-8	2-8	---	---
shadscale	ATCO	15-35	---	30-40	15-30	---	---
spiny hopsage	GRSP	---	2-5	---	---	---	---
winterfat	EULA5	---	---	2-8	---	---	---
Range site number		027XY019NV	027XY079NV	027XY027NV	027XY018NV	none	none
Potential production (lb/acre):							
Favorable years		300	500	200	400		
Normal years		175	350	100	250		
Unfavorable years		50	200	50	100		

## 200--PIROUETTE-OSOBB-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		PIROUETTE	OSOBB	ROCK OUTCROP	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	10-20	15-25	---	15-25	20-30
Sandberg bluegrass	POSE	5-10	---	---	---	---
bottlebrush squirreltail	SIEY	2-8	---	---	---	---
desert needlegrass	STSP3	---	2-10	---	2-10	---
needleandthread	STCO4	---	---	---	---	5-15
Bailey greasewood	SAVEB	15-30	---	---	---	---
Nevada dalea	PAPO	---	---	---	---	2-8
Nevada ephedra	EPNE	---	2-5	---	2-5	---
bud sagebrush	ARSP5	2-8	2-8	---	2-8	---
fourwing saltbush	ATCA2	---	---	---	---	15-25
hairy horsebrush	TECO2	---	---	---	---	25-35
littleleaf horsebrush	TEGL	---	---	---	---	2-5
shadscale	ATCO	15-30	30-40	---	30-40	---
winterfat	EULA5	---	2-8	---	2-8	---

Range site number	027XY018NV	027XY027NV	none	027XY027NV	027XY023NV
Potential production (lb/acre):					
Favorable years	400	200		200	700
Normal years	250	100		100	500
Unfavorable years	100	50		50	300

## 201--PIROUETTE-OSOBB-CELETON ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		PIROUETTE	OSOBB	CELETON	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	15-25	15-25	25-35	---	50-70	20-30
Sandberg bluegrass	POSE	5-10	---	---	---	---	---	---
bottlebrush squirreltail	SIHY	2-8	---	---	---	---	---	---
desert needlegrass	STSP3	---	2-10	2-10	2-5	---	---	---
galleta	HIJA	---	---	---	2-15	---	---	---
needleandthread	STCO4	---	---	---	---	---	5-15	5-15
globemallow	SPHAE	---	---	---	1-3	---	---	---
Bailey greasewood	SAVEB	15-30	---	---	25-35	---	---	---
Nevada dalea	PSPO	---	---	---	---	---	0-5	---
Nevada dalea	PAP0	---	---	---	---	---	---	2-8
Nevada ephedra	EPNE	---	2-5	2-5	2-5	---	---	---
bud sagebrush	ARSP5	2-8	2-8	2-8	---	---	---	---
fourwing saltbush	ATCA2	---	---	---	---	---	10-20	15-25
hairy horsebrush	TECO2	---	---	---	---	---	---	25-35
littleleaf horsebrush	TEGL	---	---	---	---	---	---	2-5
shadscale	ATCO	15-30	30-40	30-40	15-25	---	---	---
spiny hopsage	GRSP	---	---	---	---	---	2-5	---
winterfat	EULA5	---	2-8	2-8	---	---	2-8	---
Range site number		027XY018NV	027XY027NV	027XY027NV	027XY015NV	none	027XY009NV	027XY023NV
Potential production (lb/acre):								
Favorable years		400	200	200	500		700	700
Normal years		250	100	100	350		450	500
Unfavorable years		100	50	50	200		250	300

## 203--PIROUETTE-HAWSLEY ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		PIROUETTE	HAWSLEY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	50-70	5-15	15-25	---
Sandberg bluegrass	POSE	5-10	---	---	---	---
bottlebrush squirreltail	SIHY	2-8	---	2-5	---	---
desert needlegrass	STSP3	---	---	2-8	2-10	---
needleandthread	STCO4	---	5-15	---	---	---
Bailey gressewood	SAVEB	15-30	---	15-30	---	---
Nevada dalea	PSPO	---	0-5	---	---	---
Nevada ephedra	EPNE	---	---	---	2-5	---
bud sagebrush	ARSP5	2-8	---	2-8	2-8	---
fourwing saltbush	ATCA2	---	10-20	---	---	---
shadscale	ATCO	15-30	---	15-35	30-40	---
spiny hopsage	GRSP	---	2-5	---	---	---
winterfat	EULA5	---	2-8	---	2-8	---

Range site number	027XY018NV	027XY009NV	027XY019NV	027XY027NV	none
Potential production (lb/acre):					
Favorable years	400	700	300	200	
Normal years	250	450	175	100	
Unfavorable years	100	250	50	50	

## 204--PIROUETTE-OSOBB-ISOLDE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		PIROUETTE	OSOBB	ISOLDE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	15-25	20-30	---	15-25	15-30
Sandberg bluegrass	POSE	5-10	---	---	---	---	---
bottlebrush squirreltail	SIHY	2-8	---	---	---	---	---
desert needlegrass	STSP3	---	2-10	---	---	2-10	---
needleandthread	STCO4	---	---	5-15	---	---	5-10
western wheatgrass	AGSM	---	---	---	---	---	---
wheatgrass	AGROP	---	---	---	---	---	5-15
Bailey greasewood	SAVEB	15-30	---	---	---	---	---
Nevada dalea	PAPO	---	---	2-8	---	---	---
Nevada ephedra	EPNE	---	2-5	---	---	2-5	---
basin big sagebrush	ARTRT	---	---	---	---	---	15-25
bud sagebrush	ARSP5	2-8	2-8	---	---	2-8	---
fourwing saltbush	ATCA2	---	---	15-25	---	---	2-8
hairy horsebrush	TECO2	---	---	25-35	---	---	---
littleleaf horsebrush	TEGL	---	---	2-5	---	---	---
shadscale	ATCO	15-30	30-40	---	---	30-40	---
spiny hopsage	GRSP	---	---	---	---	---	5-10
winterfat	EULA5	---	2-8	---	---	2-8	---
Range site number		027XY018NV	027XY027NV	027XY023NV	none	027XY027NV	027XY045NV
Potential production (lb/acre):							
Favorable years		400	200	700		200	800
Normal years		250	100	500		100	600
Unfavorable years		100	50	300		50	400

## 206--PIROUETTE-OSOBB-OLD CAMP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		PIROUETTE	OSOBB	OLD CAMP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	15-25	5-15	---	10-20	15-25
Sandberg bluegrass	POSE	5-10	---	2-8	---	2-10	---
Thurber needlegrass	STTH2	---	---	25-35	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIRY	2-8	---	---	---	---	---
desert needlegrass	STSP3	---	2-10	---	---	5-15	---
Bailey greasewood	SAVEB	15-30	---	---	---	10-20	---
Lahontan sagebrush	ARTEM	---	---	---	---	35-50	---
Nevada ephedra	EPNE	---	2-5	2-5	---	2-8	---
Wyoming big sagebrush	ARTRW	---	---	25-35	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
bud sagebrush	ARSP5	2-8	2-8	---	---	---	---
rabbitbrush	CHRY9	---	---	---	---	---	2-5
shadscale	ATCO	15-30	30-40	---	---	2-5	---
spiny hopsage	GRSP	---	---	2-8	---	2-5	10-20
winterfat	EULA5	---	2-8	---	---	---	---

Range site number	027XY018NV	027XY027NV	027XY007NV	none	027XY070NV	027XY029NV
Potential production (lb/acre):						
Favorable years	400	200	700		400	800
Normal years	250	100	500		250	500
Unfavorable years	100	50	300		100	300



## 207--PIROUETTE-REZAVE-OSOBB ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		PIROUETTE	REZAVE	OSOBB	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	10-20	15-25	25-35	15-25	20-30
Sandberg bluegrass	POSE	5-10	5-10	---	---	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	---	---	---
desert needlegrass	STSP3	---	---	2-10	2-5	2-10	---
galleta	HIJA	---	---	---	2-15	---	---
needleandthread	STCO4	---	---	---	---	---	5-10
globemallow	SPHAE	---	---	---	1-3	---	---
Bailey greasewood	SAVEB	15-30	15-30	---	25-35	---	---
Nevada ephedra	EPNE	---	---	2-5	2-5	2-5	10-20
basin big sagebrush	ARTRT	---	---	---	---	---	2-8
bud sagebrush	ARSP5	2-8	2-8	2-8	---	2-8	---
fourwing saltbush	ATCA2	---	---	---	---	---	20-30
shadscale	ATCO	15-30	15-30	30-40	15-25	30-40	---
winterfat	EULA5	---	---	2-8	---	2-8	---

Range site number	027XY018NV	027XY018NV	027XY027NV	027XY015NV	027XY027NV	027XY053NV
Potential production (lb/acre):						
Favorable years	400	400	200	500	200	600
Normal years	250	250	100	350	100	500
Unfavorable years	100	100	50	200	50	300

## 208--PIROUETTE-THEON-RUBBLE LAND ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		PIROUETTE	THEON	RUBBLE LAND	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	5-15	---	15-30	15-25	---
Sandberg bluegrass	POSE	5-10	---	---	2-15	---	---
bottlebrush squirreltail	SIHY	2-8	2-5	---	2-8	---	---
desert needlegrass	STSP3	---	2-8	---	---	2-10	---
Bailey greasewood	SAVEB	15-30	15-30	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	2-5	---
bud sagebrush	ARSP5	2-8	2-8	---	15-25	2-8	---
shadscale	ATCO	15-30	15-35	---	20-35	30-40	---
winterfat	EULA5	---	---	---	5-10	2-8	---
Range site number		027XY018NV	027XY019NV	none	027XY013NV	027XY027NV	none
Potential production (lb/acre):							
Favorable years		400	300		600	200	
Normal years		250	175		450	100	
Unfavorable years		100	50		250	50	

## 210--BIDDLEMAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		BIDDLEMAN	BIDDLEMAN	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	10-20	50-70	---
Sandberg bluegrass	POSE	5-10	5-10	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	---
needleandthread	STCO4	---	---	5-15	---
Bailey greasewood	SAVEB	15-30	15-30	---	---
Nevada dalea	PSP0	---	---	0-5	---
bud sagebrush	ARSP5	2-8	2-8	---	---
fourwing saltbush	ATCA2	---	---	10-20	---
shadscale	ATCO	15-30	15-30	---	---
spiny hopsage	GRSP	---	---	2-5	---
winterfat	EULAS	---	---	2-8	---
Range site number		027XY018NV	027XY018NV	027XY009NV	none
Potential production (lb/acre):					
Favorable years		400	400	700	
Normal years		250	250	450	
Unfavorable years		100	100	250	

## 211--BIDDLEMAN, ERODED-TROCKEN-BIDDLEMAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BIDDLEMAN	TROCKEN	BIDDLEMAN	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	---	25-45	10-20	5-10	---
Sandberg bluegrass	POSE	---	---	5-10	---	---
bottlebrush squirreltail	SIHY	2-5	---	2-8	5-10	---
desert needlegrass	STSP3	---	2-8	---	---	---
Bailey greasewood	SAVEB	10-20	20-30	15-30	---	---
Nevada ephedra	EPNE	---	---	---	5-10	---
bud sagebrush	ARSP5	2-8	2-8	2-8	---	---
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
seepweed	SUAED	2-8	---	---	---	---
shadscale	ATCO	45-60	5-15	15-30	---	---
spiny hopsage	GRSP	---	---	---	10-20	---
winterfat	EULA5	---	2-8	---	---	---
Range site number		027XY076NV	027XY050NV	027XY018NV	027XY022NV	none
Potential production (lb/acre):						
Favorable years		250	500	400	400	
Normal years		150	350	250	200	
Unfavorable years		75	200	100	50	

## 213--BIDDLEMAN-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		BIDDLEMAN	TROCKEN	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	25-45	10-20	50-70
Sandberg bluegrass	POSE	5-10	---	5-10	---
bottlebrush squirreltail	SIHY	2-8	---	2-8	---
desert needlegrass	STSP3	---	2-8	---	---
needleandthread	STCO4	---	---	---	5-15
Bailey greasewood	SAVEB	15-30	20-30	15-30	---
Nevada dalea	PSPO	---	---	---	0-5
bud sagebrush	ARSP5	2-8	2-8	2-8	---
fourwing saltbush	ATCA2	---	---	---	10-20
shadscale	ATCO	15-30	5-15	15-30	---
spiny hopsage	GRSP	---	---	---	2-5
winterfat	EULA5	---	2-8	---	2-8
Range site number		027XY018NV	027XY050NV	027XY018NV	027XY009NV
Potential production (lb/acre):					
Favorable years		400	500	400	700
Normal years		250	350	250	450
Unfavorable years		100	200	100	250

## 214--BIDDLEMAN-TROCKEN-RUHE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BIDDLEMAN	TROCKEN	RUHE	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	25-45	50-70	10-15	10-15
Sandberg bluegrass	POSE	5-10	---	---	---	---
bottlebrush squirreltail	SIHY	2-8	---	---	5-10	5-10
desert needlegrass	STSP3	---	2-8	---	---	---
inland saltgrass	DISPS2	---	---	---	2-5	2-5
needleandthread	STCO4	---	---	5-15	---	---
Bailey greasewood	SAVEB	15-30	20-30	---	0-5	0-5
Nevada dalea	PSPO	---	---	0-5	---	---
black greasewood	SAVE4	---	---	---	20-30	20-30
bud sagebrush	ARSP5	2-8	2-8	---	2-5	2-5
fourwing saltbush	ATCA2	---	---	10-20	---	---
shadscale	ATCO	15-30	5-15	---	20-35	20-35
spiny hopsage	GRSP	---	---	2-5	---	---
winterfat	EULA5	---	2-8	2-8	---	---

Range site number	027XY018NV	027XY050NV	027XY009NV	027XY024NV	027XY024NV
Potential production (lb/acre):					
Favorable years	400	500	700	500	500
Normal years	250	350	450	350	350
Unfavorable years	100	200	250	150	150

## 215--BIDDLEMAN-ISOLDE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		BIDDLEMAN	ISOLDE	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	10-20	20-30	15-30	10-20
Sandberg bluegrass	POSE	5-10	---	2-15	5-10
bottlebrush squirreltail	SIEY	2-8	---	2-8	2-8
needleandthread	STCO4	---	5-15	---	---
Bailey greasewood	SAVEB	15-30	---	---	15-30
Nevada dalea	PAPO	---	2-8	---	---
bud sagebrush	ARSP5	2-8	---	15-25	2-8
fourwing saltbush	ATCA2	---	15-25	---	---
hairy horsebrush	TECO2	---	25-35	---	---
littleleaf horsebrush	TEGL	---	2-5	---	---
shadscale	ATCO	15-30	---	20-35	15-30
winterfat	EULA5	---	---	5-10	---
Range site number		027XY018NV	027XY023NV	027XY013NV	027XY018NV
Potential production (lb/acre):					
Favorable years		400	700	600	400
Normal years		250	500	450	250
Unfavorable years		100	300	250	100

## 216--BIDDLEMAN-BLUEWING-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BIDDLEMAN	BLUEWING	TROCKEN	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	10-20	10-20	25-45	10-20	10-20
Sandberg bluegrass	POSE	---	---	---	5-10	5-10
bottlebrush squirreltail	SIHY	---	---	---	2-8	2-8
desert needlegrass	STSP3	---	---	2-8	---	---
dropseed	SPOR0	2-5	2-5	---	---	---
Bailey greasewood	SAVEB	5-15	5-15	20-30	15-30	15-30
Cooper wolfberry	LYCO2	10-20	10-20	---	---	---
bud sagebrush	ARSP5	---	---	2-8	2-8	2-8
shadscale	ATCO	20-30	20-30	5-15	15-30	15-30
winterfat	EULA5	---	---	2-8	---	---

Range site number	027XY043NV	027XY043NV	027XY050NV	027XY018NV	027XY018NV
Potential production (lb/acre):					
Favorable years	350	350	500	400	400
Normal years	200	200	350	250	250
Unfavorable years	100	100	200	100	100



## 220--BANGO-STUMBLE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		BANGO	STUMBLE	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	50-70	10-20	---
Sandberg bluegrass	POSE	5-10	---	5-10	---
bottlebrush squirreltail	SIHY	2-8	---	2-8	---
needleandthread	STCO4	---	5-15	---	---
Bailey greasewood	SAVEB	15-30	---	15-30	---
Nevada dalea	PSPO	---	0-5	---	---
bud sagebrush	ARSP5	2-8	---	2-8	---
fourwing saltbush	ATCA2	---	10-20	---	---
shadscale	ATCO	15-30	---	15-30	---
spiny hopsage	GRSP	---	2-5	---	---
winterfat	EULA5	---	2-8	---	---
Range site number		027XY018NV	027XY009NV	027XY018NV	none
Potential production (lb/acre):					
Favorable years		400	700	400	
Normal years		250	450	250	
Unfavorable years		100	250	100	

## 221--BANGO-APPIAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or inclusion number--				
		BANGO	APPIAN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	10-20	10-20	---	10-20	15-25
Sandberg bluegrass	POSE	5-10	5-10	---	5-10	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-5	2-8	---
desert needlegrass	STSP3	---	---	---	---	2-10
Bailey greasewood	SAVEB	15-30	15-30	10-20	15-30	---
Nevada ephedra	EPNE	---	---	---	---	2-5
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8	2-8
seepweed	SUAED	---	---	2-8	---	---
shadscale	ATCO	15-30	15-30	45-60	15-30	30-40
winterfat	EULA5	---	---	---	---	2-8

Range site number	027XY018NV	027XY018NV	027XY076NV	027XY018NV	027XY027NV
Potential production (lb/acre):					
Favorable years	400	400	250	400	200
Normal years	250	250	150	250	100
Unfavorable years	100	100	75	100	50

## 222--BANGO-PLAYAS-CHUCKLES ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BANGO	PLAYAS	CHUCKLES	Inclusion 1	Inclusion 2	Inclusion 3
Baltic rush	JUBA	---	---	---	---	---	5-10
Indian ricegrass	ORHY	10-20	---	10-15	---	20-30	---
Sandberg bluegrass	POSE	5-10	---	---	---	---	---
alkali sacaton	SPAI	---	---	---	2-10	---	30-45
basin wildrye	ELCI2	---	---	---	30-45	---	2-5
bottlebrush squirreltail	SIEY	2-8	---	5-10	---	---	---
inland saltgrass	DISPS2	---	---	2-5	---	2-5	10-15
western wheatgrass	AGSM	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	15-30	---	0-5	---	---	---
Torrey quailbush	ATTO	---	---	---	30-50	---	---
black greasewood	SAVE4	---	---	20-30	2-10	30-50	---
bud sagebrush	ARSP5	2-8	---	2-5	---	---	---
fourwing saltbush	ATCA2	---	---	---	2-5	2-5	---
shadscale	ATCO	15-30	---	20-35	---	2-5	---

Range site number	027XY018NV	none	027XY024NV	027XY041NV	027XY016NV	027XY005NV
Potential production (lb/acre):						
Favorable years	400		500	1500	500	3000
Normal years	250		350	1000	300	2200
Unfavorable years	100		150	600	150	1000

## 230--URIPNES-BUDIHOL-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		URIPNES	BUDIHOL	ROCK OUTCROP	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	---	5-15	---	5-15	15-25
Sandberg bluegrass	POSE	---	2-8	---	---	---
Thurber needlegrass	STTH2	---	25-35	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15
desert needlegrass	STSP3	40-50	---	---	40-60	---
globemallow	SPHAE	---	---	---	1-3	---
Anderson wolfberry	LYAN	2-8	---	---	2-5	---
Nevada ephedra	EPNE	2-10	2-5	---	2-5	---
Wyoming big sagebrush	ARTRW	---	25-35	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30
littleleaf horsebrush	TEGL	5-15	---	---	---	---
rabbitbrush	CHRYSS9	---	---	---	---	2-5
shadscale	ATCO	---	---	---	20-35	---
spiny hopsage	GRSP	5-15	2-8	---	2-8	10-20
Range site number		027XY047NV	027XY007NV	none	027XY017NV	027XY029NV
Potential production (lb/acre):						
Favorable years		500	700		400	800
Normal years		350	500		200	500
Unfavorable years		200	300		100	300

## 231--URIPNES-BUDIOL-CHILL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		URIPNES	BUDIOL	CHILL	Inclusion 1	Inclusion 2
Canby bluegrass	POCA	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---
Idaho fescue	FEID	---	---	---	---	25-35
Indian ricegrass	ORHY	5-15	5-15	20-25	---	---
Sandberg bluegrass	POSE	---	2-8	2-5	---	---
Thurber needlegrass	STTH2	---	25-35	---	---	---
bluegrass	POA++	---	---	---	---	5-15
bottlebrush squirreltail	SIEY	---	---	2-5	---	---
desert needlegrass	STSP3	40-60	---	---	---	---
muttongrass	POFE	---	---	---	---	---
needleandthread	STCO4	---	---	5-15	---	---
needlegrass	STIPA	---	---	---	---	5-10
western needlegrass	STOC2	---	---	---	---	---
globemallow	SPHAE	1-3	---	---	---	---
Anderson wolfberry	LYAN	2-5	---	---	---	---
Nevada ephedra	EPNE	2-5	2-5	2-5	---	---
Wyoming big sagebrush	ARTRW	---	25-35	20-30	---	---
low sagebrush	ARAR8	---	---	---	---	20-30
shadscale	ATCO	20-35	---	---	---	---
spiny hopsage	GRSP	2-8	2-8	10-25	---	---
winterfat	EULA5	---	---	2-5	---	---

Range site number	027XY017NV	027XY007NV	027XY008NV	none	027XY046NV
Potential production (lb/acre):					
Favorable years	400	700	700		600
Normal years	200	500	500		400
Unfavorable years	100	300	300		250

## 232--URIPNES-ROCK OUTCROP ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		URIPNES	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	X	---	---
Idaho fescue	FEID	---	---	X	---	---
Indian ricegrass	ORHY	5-15	---	X	5-15	15-25
Sandberg bluegrass	POSE	---	---	X	2-8	---
Thurber needlegrass	STTH2	---	---	X	25-35	---
basin wildrye	ELCI2	---	---	---	---	5-15
bottlebrush squirreltail	SIEY	---	---	X	---	---
desert needlegrass	STSP3	40-60	---	---	---	---
arrowleaf balsamroot	BASA2	---	---	X	---	---
globemallow	SPHAE	1-3	---	---	---	---
tapertip hawksbeard	CRAC2	---	---	X	---	---
Anderson wolfberry	LYAN	2-5	---	---	---	---
Nevada ephedra	EPNE	2-5	---	---	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	25-35	---
antelope bitterbrush	PUTR2	---	---	X	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30
ephedra	EPHED	---	---	X	---	---
mountain big sagebrush	ARVA2	---	---	X	---	---
rabbitbrush	CHRY9	---	---	---	---	2-5
serviceberry	AMELA	---	---	X	---	---
shadscale	ATCO	20-35	---	---	---	---
spiny hopsage	GRSP	2-8	---	---	2-8	10-20
Utah juniper	JUOS	---	---	X	---	---
singleleaf pinyon	PIMO	---	---	X	---	---

Range site number	027XY017NV	none	027XY082NV	027XY007NV	027XY029NV
Potential production (lb/acre):					
Favorable years	400		700	700	800
Normal years	200		500	500	500
Unfavorable years	100		300	300	300

## 240--WATOOPAH-GENEGRAF-BUCKAROO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		WATOOPAH	GENEGRAF	BUCKAROO	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	15-30	10-20	10-20	15-30	20-30
Sandberg bluegrass	POSE	---	5-10	5-10	---	---
bottlebrush squirreltail	SIHY	---	2-8	2-8	---	---
needleandthread	STCO4	5-10	---	---	5-10	5-10
thickspike wheatgrass	AGDA	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---
wheatgrass	AGROP	5-15	---	---	5-15	---
Bailey greasewood	SAVEB	---	15-30	15-30	---	---
Nevada ephedra	EPNE	---	---	---	---	10-20
basin big sagebrush	ARTET	15-25	---	---	15-25	2-8
bud sagebrush	ARSP5	---	2-8	2-8	---	---
fourwing saltbush	ATCA2	2-8	---	---	2-8	20-30
shadscale	ATCO	---	15-30	15-30	---	---
spiny hopsage	GRSP	5-10	---	---	5-10	---
Range site number		027XY045NV	027XY018NV	027XY018NV	027XY045NV	027XY053NV
Potential production (lb/acre):						
Favorable years		800	400	400	800	600
Normal years		600	250	250	600	500
Unfavorable years		400	100	100	400	300

## 241--WATOOPAH-BUCKAROO-WHOLAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		WATOOPAH	BUCKAROO	WHOLAN	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-30	10-20	40-50	20-30	15-30	15-25	15-30
Sandberg bluegrass	POSE	---	5-10	---	---	---	---	2-15
basin wildrye	ELCI2	---	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	---	2-8	2-5	---	---	---	2-8
needleandthread	STCO4	5-10	---	5-15	5-10	5-10	---	---
thickspike wheatgrass	AGDA	---	---	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---	---	---
wheatgrass	AGROP	5-15	---	---	---	5-15	---	---
globemallow	SPEAE	---	---	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	15-30	---	---	---	---	---
Nevada ephedra	EPNE	---	---	---	10-20	---	---	---
basin big sagebrush	ARTRT	15-25	---	---	2-8	15-25	20-30	---
bud sagebrush	ARSP5	---	2-8	5-15	---	---	---	15-25
fourwing saltbush	ATCA2	2-8	---	---	20-30	2-8	---	---
rabbitbrush	CHRYSS9	---	---	---	---	---	2-5	---
shadscale	ATCO	---	15-30	---	---	---	---	20-35
spiny hopsage	GRSP	5-10	---	---	---	5-10	10-20	---
winterfat	EULA5	---	---	25-30	---	---	---	5-10
Range site number		027XY045NV	027XY018NV	027XY014NV	027XY053NV	027XY045NV	027XY029NV	027XY013NV
Potential production (lb/acre):								
Favorable years		800	400	700	600	800	800	600
Normal years		600	250	500	500	600	500	450
Unfavorable years		400	100	350	300	400	300	250



## 250--REZAVE-SINGATSE-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		REZAVE	SINGATSE	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	15-25	---	15-25	50-70	15-25	10-20
Sandberg bluegrass	POSE	5-10	---	---	---	---	---	5-10
bottlebrush squirreltail	SIHY	2-8	---	---	---	---	---	2-8
desert needlegrass	STSP3	---	2-10	---	2-10	---	2-10	---
needleandthread	STCO4	---	---	---	---	5-15	---	---
Bailey greasewood	SAVEB	15-30	---	---	---	---	---	15-30
Nevada dalea	PSPO	---	---	---	---	0-5	---	---
Nevada ephedra	EPNE	---	2-5	---	2-5	---	2-5	---
bud sagebrush	ARSP5	2-8	2-8	---	2-8	---	2-8	2-8
fourwing saltbush	ATCA2	---	---	---	---	10-20	---	---
shadscale	ATCO	15-30	30-40	---	30-40	---	30-40	15-30
spiny hopsage	GRSP	---	---	---	---	2-5	---	---
winterfat	EULA5	---	2-8	---	2-8	2-8	2-8	---

Range site number	027XY018NV	027XY027NV	none	027XY027NV	027XY009NV	027XY027NV	027XY018NV
Potential production (lb/acre):							
Favorable years	400	200		200	700	200	400
Normal years	250	100		100	450	100	250
Unfavorable years	100	50		50	250	50	100

## 260--APPIAN-PLAYAS ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		APPIAN	PLAYAS	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	10-20	---	20-30	10-20
Sandberg bluegrass	POSE	5-10	---	---	5-10
bottlebrush squirreltail	SIHY	2-8	---	---	2-8
inland saltgrass	DISPS2	---	---	2-5	---
Bailey greasewood	SAVEB	15-30	---	---	15-30
black greasewood	SAVE4	---	---	30-50	---
bud sagebrush	ARSP5	2-8	---	---	2-8
fourwing saltbush	ATCA2	---	---	2-5	---
shadscale	ATCO	15-30	---	2-5	15-30
Range site number		027XY018NV	none	027XY016NV	027XY018NV
Potential production (lb/acre):					
Favorable years		400		500	400
Normal years		250		300	250
Unfavorable years		100		150	100

## 261--APPIAN LOAMY SAND, 0 TO 2 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		APPIAN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	10-20	20-30	50-70	---
Sandberg bluegrass	POSE	5-10	---	---	---
bottlebrush squirreltail	SIHY	2-8	---	---	---
needleandthread	STCO4	---	5-15	5-15	---
Bailey greasewood	SAVEB	15-30	---	---	---
Nevada dalea	PSPO	---	---	0-5	---
Nevada dalea	PAPO	---	2-8	---	---
bud sagebrush	ARSP5	2-8	---	---	---
fourwing saltbush	ATCA2	---	15-25	10-20	---
hairy horsebrush	TECO2	---	25-35	---	---
littleleaf horsebrush	TEGL	---	2-5	---	---
shadscale	ATCO	15-30	---	---	---
spiny hopsage	GRSP	---	---	2-5	---
winterfat	EULA5	---	---	2-8	---
Range site number		027XY018NV	027XY023NV	027XY009NV	none
Potential production (lb/acre):					
Favorable years		400	700	700	
Normal years		250	500	450	
Unfavorable years		100	300	250	

## 262--APPIAN-JUVA-BANGO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		APPIAN	JUVA	BANGO	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	10-20	10-20	10-20	50-70	5-10	---
Sandberg bluegrass	POSE	5-10	5-10	5-10	5-10	---	---	---
bottlebrush squirreltail	SIRY	2-8	2-8	2-8	2-8	---	5-10	---
needleandthread	STCO4	---	---	---	---	5-15	---	---
Bailey greasewood	SAVEB	15-30	15-30	15-30	15-30	---	---	---
Nevada dalea	PSPO	---	---	---	---	0-5	---	---
Nevada ephedra	EPNE	---	---	---	---	---	5-10	---
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8	---	---	---
burrobrush	HYMEN3	---	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	10-20	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-20	---
shadscale	ATCO	15-30	15-30	15-30	15-30	---	---	---
spiny hopsage	GRSP	---	---	---	---	2-5	10-20	---
winterfat	EULA5	---	---	---	---	2-8	---	---

Range site number	027XY018NV	027XY018NV	027XY018NV	027XY018NV	027XY009NV	027XY022NV	none
Potential production (lb/acre):							
Favorable years	400	400	400	400	700	400	
Normal years	250	250	250	250	450	200	
Unfavorable years	100	100	100	100	250	50	

## 270--FUBBLE-NICANOR ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		FUBBLE	NICANOR	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-10	5-15	---	15-25
Sandberg bluegrass	POSE	2-8	---	2-8	---	---
Thurber needlegrass	STTH2	25-35	---	30-40	---	---
basin wildrye	ELCY2	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	---	5-10	---	---	---
desert needlegrass	STSP3	---	15-25	---	---	---
Nevada ephedra	EPNE	2-5	5-10	---	---	---
Wyoming big sagebrush	ARTRW	25-35	20-35	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30
black sagebrush	ARARN	---	---	25-35	---	---
purple sage	SADOC2	---	5-10	---	---	---
rabbitbrush	CHRY9	---	---	---	---	2-5
spiny hopsage	GRSP	2-8	---	---	---	10-20
Range site number		027XY007NV	027XY051NV	027XY032NV	none	027XY029NV
Potential production (lb/acre):						
Favorable years		700	500	500		800
Normal years		500	350	300		500
Unfavorable years		300	200	200		300

## 280--TROCKEN-CHUCKLES ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		TROCKEN	CHUCKLES	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-15	10-15	25-45	---	5-10
bottlebrush squirreltail	SIHY	5-10	5-10	---	---	5-10
desert needlegrass	STSP3	---	---	2-8	---	---
inland saltgrass	DISPS2	2-5	2-5	---	---	---
Bailey greasewood	SAVEB	0-5	0-5	20-30	---	---
Nevada ephedra	EPNE	---	---	---	---	5-10
black greasewood	SAVE4	20-30	20-30	---	---	---
bud sagebrush	ARSP5	2-5	2-5	2-8	---	---
burrobrush	HYMEN3	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	10-20
shadscale	ATCO	20-35	20-35	5-15	---	---
spiny hopsage	GRSP	---	---	---	---	10-20
winterfat	EULA5	---	---	2-8	---	---
Range site number		027XY024NV	027XY024NV	027XY050NV	none	027XY022NV
Potential production (lb/acre):						
Favorable years		500	500	500		400
Normal years		350	350	350		200
Unfavorable years		150	150	200		50

## 281--TROCKEN-RAGTOWN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		TROCKEN	RAGTOWN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-15	---	---	---	---
bottlebrush squirreltail	SIEY	5-10	---	---	---	---
inland saltgrass	DISPS2	2-5	2-10	2-10	2-10	---
Bailey greasewood	SAVE3	0-5	---	---	---	---
black greasewood	SAVE4	20-30	60-70	60-70	60-70	---
bud sagebrush	ARSP5	2-5	---	---	---	---
seepweed	SUAED	---	2-8	2-8	2-8	---
shadscale	ATCO	20-35	2-10	2-10	2-10	---
Range site number		027XY024NV	027XY025NV	027XY025NV	027XY025NV	none
Potential production (lb/acre):						
Favorable years		500	500	500	500	
Normal years		350	350	350	350	
Unfavorable years		150	200	200	200	

## 283--TROCKEN-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		TROCKEN	BLUEWING	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	25-45	5-10	15-25	10-20
Sandberg bluegrass	POSE	---	---	---	5-10
basin wildrye	ELCI2	---	---	5-15	---
bottlebrush squirreltail	SIHY	---	5-10	---	2-8
desert needlegrass	STSP3	2-8	---	---	---
Bailey greasewood	SAVEB	20-30	---	---	15-30
Nevada ephedra	EPNE	---	5-10	---	---
basin big sagebrush	ARTRT	---	---	20-30	---
bud sagebrush	ARSP5	2-8	---	---	2-8
burrobrush	HYMEN3	---	5-10	---	---
fourwing saltbush	ATCA2	---	5-10	---	---
littleleaf horsebrush	TEGL	---	10-20	---	---
rabbitbrush	CHRY59	---	---	2-5	---
rubber rabbitbrush	CHNA2	---	10-20	---	---
shadscale	ATCO	5-15	---	---	15-30
spiny hopsage	GRSP	---	10-20	10-20	---
winterfat	EULA5	2-8	---	---	---
Range site number		027XY050NV	027XY022NV	027XY029NV	027XY018NV
Potential production (lb/acre):					
Favorable years		500	400	800	400
Normal years		350	200	500	250
Unfavorable years		200	50	300	100



## 284--TROCKEN VERY GRAVELLY SANDY LOAM, 2 TO 15 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		TROCKEN	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	25-45	5-10	50-70
bottlebrush squirreltail	SIHY	---	5-10	---
desert needlegrass	STSP3	2-8	---	---
needleandthread	STCO4	---	---	5-15
Bailey greasewood	SAVEB	20-30	---	---
Nevada dalea	PSPO	---	---	0-5
Nevada ephedra	EPNE	---	5-10	---
bud sagebrush	ARSP5	2-8	---	---
burrobrush	HYMEN3	---	5-10	---
fourwing saltbush	ATCA2	---	5-10	10-20
littleleaf horsebrush	TEGL	---	10-20	---
rubber rabbitbrush	CHNA2	---	10-20	---
shadscale	ATCO	5-15	---	---
spiny hopsage	GRSP	---	10-20	2-5
winterfat	EULA5	2-8	---	2-8
Range site number		027XY050NV	027XY022NV	027XY009NV
Potential production (lb/acre):				
Favorable years		500	400	700
Normal years		350	200	450
Unfavorable years		200	50	250

## 290--HUXLEY GRAVELLY CLAY LOAM, 0 TO 2 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		HUXLEY	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	---	10-20	20-30
Sandberg bluegrass	POSE	---	5-10	---
bottlebrush squirreltail	SIRY	---	2-8	---
inland saltgrass	DISPS2	2-10	---	2-5
Bailey greasewood	SAVEB	---	15-30	---
black greasewood	SAVE4	60-70	---	30-50
bud sagebrush	ARSP5	---	2-8	---
fourwing saltbush	ATCA2	---	---	2-5
seepweed	SUAED	2-8	---	---
shadscale	ATCO	2-10	15-30	2-5

Range site number	027XY025NV	027XY018NV	027XY016NV
Potential production (lb/acre):			
Favorable years	500	400	500
Normal years	350	250	300
Unfavorable years	200	100	150

## 300--OLD CAMP-COLBAR-ROCK OUTCROP ASSOCIATION, STEEP

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		OLD CAMP	COLBAR	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---	---
Indian ricegrass	ORHY	5-15	5-10	---	5-15	15-25	---
Sandberg bluegrass	POSE	2-8	---	---	2-8	---	---
Thurber needlegrass	STTH2	25-35	---	---	30-40	---	5-15
basin wildrye	ELCI2	---	---	---	---	---	2-5
bluebunch wheatgrass	AGSP	---	---	---	---	---	40-60
bluegrass	POA++	---	---	---	---	---	2-8
bottlebrush squirreltail	SIEY	---	5-10	---	---	---	---
desert needlegrass	STSP3	---	15-25	---	---	2-10	---
arrowleaf balsamroot	BASA3	---	---	---	---	---	2-5
tapertip hawksbeard	CRAC2	---	---	---	---	---	2-5
Nevada ephedra	EPNE	2-5	5-10	---	---	2-5	---
Wyoming big sagebrush	ARTRW	25-35	20-35	---	---	---	---
big sagebrush	ARTR2	---	---	---	---	---	15-25
black sagebrush	ARARN	---	---	---	25-35	---	---
bud sagebrush	ARSP5	---	---	---	---	2-8	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
purple sage	SADOC2	---	5-10	---	---	---	---
shadscale	ATCO	---	---	---	---	30-40	---
spiny hopsage	GRSP	2-8	---	---	---	---	---
winterfat	EULA5	---	---	---	---	2-8	---
Range site number		027XY007NV	027XY051NV	none	027XY032NV	027XY027NV	024XY028NV
Potential production (lb/acre):							
Favorable years		700	500		500	200	1000
Normal years		500	350		300	100	700
Unfavorable years		300	200		200	50	500

## 301--OLD CAMP-MIRKWOOD-NEMICO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		OLD CAMP	MIRKWOOD	NEMICO	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-15	25-35	---	5-10	15-25
Sandberg bluegrass	POSE	2-8	---	---	---	---	---
Thurber needlegrass	STTH2	25-35	---	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIRY	---	---	---	---	5-10	---
desert needlegrass	STSP3	---	40-60	2-5	---	15-25	---
galleta	HIJA	---	---	2-15	---	---	---
globemallow	SPHAE	---	1-3	1-3	---	---	---
Anderson wolfberry	LYAN	---	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	---	25-35	---	---	---
Nevada ephedra	EPNE	2-5	2-5	2-5	---	5-10	---
Wyoming big sagebrush	ARTRW	25-35	---	---	---	20-35	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
purple sage	SADOC2	---	---	---	---	5-10	---
rabbitbrush	CHRY59	---	---	---	---	---	2-5
shadscale	ATCO	---	20-35	15-25	---	---	---
spiny hopsage	GRSP	2-8	2-8	---	---	---	10-20
Range site number		027XY007NV	027XY017NV	027XY015NV	none	027XY051NV	027XY029NV
Potential production (lb/acre):							
Favorable years		700	400	500		500	800
Normal years		500	200	350		350	500
Unfavorable years		300	100	200		200	300

## 302--OLD CAMP-SINGATSE-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		OLD CAMP	SINGATSE	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	15-25	---	5-10	5-15	5-15
Sandberg bluegrass	POSE	2-8	---	---	---	---	2-8
Thurber needlegrass	STTH2	25-35	---	---	---	---	30-40
bottlebrush squirreltail	SIHY	---	---	---	5-10	2-5	---
desert needlegrass	STSP3	---	2-10	---	15-25	2-8	---
Bailey greasewood	SAVEB	---	---	---	---	15-30	---
Nevada ephedra	EPNE	2-5	2-5	---	5-10	---	---
Wyoming big sagebrush	ARTRW	25-35	---	---	20-35	---	---
black sagebrush	ARARN	---	---	---	---	---	25-35
bud sagebrush	ARSP5	---	2-8	---	---	2-8	---
purple sage	SADOC2	---	---	---	5-10	---	---
shadscale	ATCO	---	30-40	---	---	15-35	---
spiny hopsage	GRSP	2-8	---	---	---	---	---
winterfat	EULA5	---	2-8	---	---	---	---

Range site number	027XY007NV	027XY027NV	none	027XY051NV	027XY019NV	027XY032NV
Potential production (lb/acre):						
Favorable years	700	200		500	300	500
Normal years	500	100		350	175	300
Unfavorable years	300	50		200	50	200

## 304--OLD CAMP-BOMBADIL-LOOMER ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		OLD CAMP	BOMBADIL	LOOMER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	OREY	5-15	5-10	---	---	5-15	15-25	25-35
Sandberg bluegrass	POSE	2-8	---	2-8	---	---	---	---
Thurber needlegrass	STTH2	25-35	---	20-35	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15	---
bottlebrush squirreltail	SIEY	---	5-10	---	---	2-5	---	---
desert needlegrass	STSP3	---	15-25	2-5	---	2-8	---	2-5
galleta	HIJA	---	---	---	---	---	---	2-15
globemallow	SPHAE	---	---	---	---	---	---	1-3
Bailey greasewood	SAVEB	---	---	---	---	15-30	---	25-35
Lahontan sagebrush	ARTEM	---	---	30-35	---	---	---	---
Nevada ephedra	EPNE	2-5	5-10	---	---	---	---	2-5
Wyoming big sagebrush	ARTRW	25-35	20-35	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30	---
bud sagebrush	ARSP5	---	---	---	---	2-8	---	---
purple sage	SADOC2	---	5-10	---	---	---	---	---
rabbithrush	CHRY9	---	---	---	---	---	2-5	---
shadscale	ATCO	---	---	---	---	15-35	---	15-25
spiny hopsage	GRSP	2-8	---	2-5	---	---	10-20	---
Range site number		027XY007NV	027XY051NV	027XY079NV	none	027XY019NV	027XY029NV	027XY015NV
Potential production (lb/acre):								
Favorable years		700	500	500		300	800	500
Normal years		500	350	350		175	500	350
Unfavorable years		300	200	200		50	300	200

## 305--OLD CAMP-COLBAR-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		OLD CAMP	COLBAR	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---	---
Indian ricegrass	ORRY	5-15	5-10	---	---	15-30	5-15
Sandberg bluegrass	POSE	2-8	---	---	---	2-15	2-8
Thurber needlegrass	STTH2	25-35	---	---	5-15	---	30-40
basin wildrye	ELCI2	---	---	---	2-5	---	---
bluebunch wheatgrass	AGSP	---	---	---	40-60	---	---
bluegrass	POA++	---	---	---	2-8	---	---
bottlebrush squirreltail	SIRY	---	5-10	---	---	2-8	---
desert needlegrass	STSP3	---	15-25	---	---	---	---
arrowleaf balsamroot	BASA3	---	---	---	2-5	---	---
tapertip hawksbeard	CRAC2	---	---	---	2-5	---	---
Nevada ephedra	EPNE	2-5	5-10	---	---	---	---
Wyoming big sagebrush	ARTRW	25-35	20-35	---	---	---	---
big sagebrush	ARTR2	---	---	---	15-25	---	---
black sagebrush	ARARN	---	---	---	---	---	25-35
bud sagebrush	ARSP5	---	---	---	---	15-25	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
purple sage	SADOC2	---	5-10	---	---	---	---
shadscale	ATCO	---	---	---	---	20-35	---
spiny hopsage	GRSP	2-8	---	---	---	---	---
winterfat	EULA5	---	---	---	---	5-10	---
Range site number		027XY007NV	027XY051NV	none	024XY028NV	027XY013NV	027XY032NV
Potential production (lb/acre):							
Favorable years		700	500		1000	600	500
Normal years		500	350		700	450	300
Unfavorable years		300	200		500	250	200

## 307--OLD CAMP-THEON-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		OLD CAMP	THEON	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-15	---	5-15	5-15	15-25
Sandberg bluegrass	POSE	2-8	---	---	---	2-8	---
Thurber needlegrass	STTH2	25-35	---	---	---	30-40	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIEY	---	2-5	---	---	---	---
desert needlegrass	STSP3	---	2-8	---	40-60	---	---
globemallow	SPHAE	---	---	---	1-3	---	---
Anderson wolfberry	LYAN	---	---	---	2-5	---	---
Bailey greasewood	SAVEB	---	15-30	---	---	---	---
Nevada ephedra	EPNE	2-5	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	25-35	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
black sagebrush	ARARN	---	---	---	---	25-35	---
bud sagebrush	ARSP5	---	2-8	---	---	---	---
rabbitbrush	CHRY59	---	---	---	---	---	2-5
shadscale	ATCO	---	15-35	---	20-35	---	---
spiny hopsage	GRSP	2-8	---	---	2-8	---	10-20
Range site number		027XY007NV	027XY019NV	none	027XY017NV	027XY032NV	027XY029NV
Potential production (lb/acre):							
Favorable years		700	300		400	500	800
Normal years		500	175		200	300	500
Unfavorable years		300	50		100	200	300



## 308--OLD CAMP-CLANALPINE-COLBAR ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		OLD CAMP	CLANALPINE	COLBAR	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	X	---	---	X	---
Cusick bluegrass	POCU3	---	X	---	---	---	---
Idaho fescue	FEID	---	X	---	---	---	---
Indian ricegrass	OREY	5-15	---	5-10	5-15	X	---
Sandberg bluegrass	POSE	2-8	X	---	2-8	X	---
Thurber needlegrass	STTH2	25-35	---	---	30-40	X	---
bottlebrush squirreltail	SIBY	---	---	5-10	---	X	---
desert needlegrass	STSP3	---	---	15-25	---	---	---
arrowleaf balsamroot	BASA3	---	X	---	---	---	---
arrowleaf balsamroot	BASA2	---	---	---	---	X	---
lupine	LUPIN	---	X	---	---	---	---
phlox	PHLOX	---	X	---	---	---	---
tapertip hawksbeard	CRAC2	---	X	---	---	X	---
Nevada ephedra	EPNE	2-5	---	5-10	---	---	---
Wyoming big sagebrush	ARTRW	25-35	---	20-35	---	X	---
black sagebrush	ARARN	---	---	---	25-35	---	---
currant	RIBES	---	X	---	---	---	---
ephedra	EPHED	---	---	---	---	X	---
mountain big sagebrush	ARVA2	---	X	---	---	---	---
oceanspray	HOLOD	---	X	---	---	---	---
purple sage	SADOC2	---	---	5-10	---	---	---
spiny hopsage	GRSP	2-8	---	---	---	---	---
Utah juniper	JUOS	---	X	---	---	X	---
singleleaf pinyon	PIMO	---	X	---	---	X	---
Range site number		027XY007NV	027XY080NV	027XY051NV	027XY032NV	027XY081NV	none
Potential production (lb/acre):							
Favorable years		700	350	500	500	500	
Normal years		500	150	350	300	300	
Unfavorable years		300	100	200	200	200	

## 309--OLD CAMP-PICKUP-LOOMER ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable.  
Absense of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		OLD CAMP	PICKUP	LOOMER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	---	---	---	---	---	---	X
Indian ricegrass	ORHY	5-15	---	---	---	20-25	---	X
Sandberg bluegrass	POSE	2-8	2-8	2-8	---	2-5	---	X
Thurber needlegrass	STTH2	25-35	20-35	20-35	X	---	---	X
bottlebrush squirreltail	SIHY	---	---	---	---	2-5	---	X
desert needlegrass	STSP3	---	2-5	2-5	---	---	---	---
needleandthread	STCO4	---	---	---	---	5-15	---	---
arrowleaf balsamroot	BASA2	---	---	---	---	---	---	X
tapertip hawksbeard	CRAC2	---	---	---	---	---	---	X
Lahontan sagebrush	ARTEM	---	30-35	30-35	---	---	---	---
Nevada ephedra	EPNE	2-5	---	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	25-35	---	---	---	20-30	---	X
ephedra	EPHED	---	---	---	---	---	---	X
spiny hopsage	GRSP	2-8	2-5	2-5	---	10-25	---	---
winterfat	EULAS	---	---	---	---	2-5	---	---
Utah juniper	JUOS	---	---	---	---	---	---	X
singleleaf pinyon	PIMO	---	---	---	X	---	---	X
bluebunch wheatgrass	AGSP	---	---	---	X	---	---	---
black sagebrush	ARARN	---	---	---	X	---	---	---
Range site number		027XY007NV	027XY079NV	027XY079NV	024XY051NV	027XY008NV	none	027XY081NV
Potential production (lb/acre):								
Favorable years		700	500	500	500	700		500
Normal years		500	350	350	300	500		300
Unfavorable years		300	200	200	250	300		200

## 310--REDNIK-TROCKEN-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		REDNIK	TROCKEN	BLUEWING	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	25-45	25-45	5-10	10-20
Sandberg bluegrass	POSE	5-10	---	---	---	5-10
bottlebrush squirreltail	SIHY	2-8	---	---	5-10	2-8
desert needlegrass	STSP3	---	2-8	2-8	---	---
Bailey greasewood	SAVEB	15-30	20-30	20-30	---	15-30
Nevada ephedra	EPNE	---	---	---	5-10	---
bud sagebrush	ARSP5	2-8	2-8	2-8	---	2-8
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
shadscale	ATCO	15-30	5-15	5-15	---	15-30
spiny hopsage	GRSP	---	---	---	10-20	---
winterfat	EULA5	---	2-8	2-8	---	---
Range site number		027XY018NV	027XY050NV	027XY050NV	027XY022NV	027XY018NV
Potential production (lb/acre):						
Favorable years		400	500	500	400	400
Normal years		250	350	350	200	250
Unfavorable years		100	200	200	50	100

## 311--REDNIK-TROCKEN-GENEGRAF ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		REDNIK	TROCKEN	GENEGRAF	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	25-45	10-20	5-10	25-45	15-25
Sandberg bluegrass	POSE	5-10	---	5-10	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-8	---	2-8	5-10	---	---
desert needlegrass	STSP3	---	2-8	---	---	2-8	---
Bailey greasewood	SAVEB	15-30	20-30	15-30	---	20-30	---
Nevada ephedra	EPNE	---	---	---	5-10	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
bud sagebrush	ARSP5	2-8	2-8	2-8	---	2-8	---
burrobrush	HYMEN3	---	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---	---
rabbitbrush	CHRY9	---	---	---	---	---	2-5
rubber rabbitbrush	CHNA2	---	---	---	10-20	---	---
shadscale	ATCO	15-30	5-15	15-30	---	5-15	---
spiny hopsage	GRSP	---	---	---	10-20	---	10-20
winterfat	EULA5	---	2-8	---	---	2-8	---
Range site number		027XY018NV	027XY050NV	027XY018NV	027XY022NV	027XY050NV	027XY029NV
Potential production (lb/acre):							
Favorable years		400	500	400	400	500	800
Normal years		250	350	250	200	350	500
Unfavorable years		100	200	100	50	200	300

## 313--REDNIK-RICERT-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		REDNIK	RICERT	TROCKEN	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	15-30	15-30	15-30	15-25	5-10
Sandberg bluegrass	POSE	2-15	2-15	2-15	---	---
basin wildrye	ELCI2	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	---	5-10
Nevada ephedra	EPNE	---	---	---	---	5-10
basin big sagebrush	ARTRT	---	---	---	20-30	---
bud sagebrush	ARSP5	15-25	15-25	15-25	---	---
burrobrush	HYMEN3	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	10-20
rabbitbrush	CHRY9	---	---	---	2-5	---
rubber rabbitbrush	CENA2	---	---	---	---	10-20
shadscale	ATCO	20-35	20-35	20-35	---	---
spiny hopsage	GRSP	---	---	---	10-20	10-20
winterfat	EULA5	5-10	5-10	5-10	---	---
Range site number		027XY013NV	027XY013NV	027XY013NV	027XY029NV	027XY022NV
Potential production (lb/acre):						
Favorable years		500	600	600	800	400
Normal years		450	450	450	500	200
Unfavorable years		250	250	250	300	50

## 315--REDNIK-GENEGRAF-BARNMOT ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		REDNIK	GENEGRAF	BARNMOT	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	10-20	15-25	10-20	5-10	50-70	---
Sandberg bluegrass	POSE	5-10	5-10	---	5-10	---	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	2-8	5-10	---	---
desert needlegrass	STSP3	---	---	2-10	---	---	---	---
needleandthread	STCO4	---	---	---	---	---	5-15	---
Bailey greasewood	SAVEB	15-30	15-30	---	15-30	---	---	---
Nevada dalea	PSPO	---	---	---	---	---	0-5	---
Nevada ephedra	EPNE	---	---	2-5	---	5-10	---	---
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8	---	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	10-20	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---	---
shadscale	ATCO	15-30	15-30	30-40	15-30	---	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	2-5	---
winterfat	EULA5	---	---	2-8	---	---	2-8	---

Range site number	027XY018NV	027XY018NV	027XY027NV	027XY018NV	027XY022NV	027XY009NV	none
Potential production (lb/acre):							
Favorable years	400	400	200	400	400	700	
Normal years	250	250	100	250	200	450	
Unfavorable years	100	100	50	100	50	250	

## 316--REDNIK ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		REDNIK	REDNIK	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	15-25	10-20	50-70	5-10
Sandberg bluegrass	POSE	5-10	---	5-10	---	---
bottlebrush squirreltail	SIHY	2-8	---	2-8	---	5-10
desert needlegrass	STSP3	---	2-10	---	---	---
needleandthread	STCO4	---	---	---	5-15	---
Bailey greasewood	SAVEB	15-30	---	15-30	---	---
Nevada dalea	PSPO	---	---	---	0-5	---
Nevada ephedra	EPNE	---	2-5	---	---	5-10
bud sagebrush	ARSP5	2-8	2-8	2-8	---	---
burrobrush	HYMEN3	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	10-20	5-10
littleleaf horsebrush	TEGL	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	10-20
shadscale	ATCO	15-30	30-40	15-30	---	---
spiny hopsage	GRSP	---	---	---	2-5	10-20
winterfat	EULA5	---	2-8	---	2-8	---

Range site number	027XY018NV	027XY027NV	027XY018NV	027XY009NV	027XY022NV
Potential production (lb/acre):					
Favorable years	400	200	400	700	400
Normal years	250	100	250	450	200
Unfavorable years	100	50	100	250	50

## 317--REDNIK-CLEAVER-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		REDNIK	CLEAVER	TROCKEN	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	10-20	25-45	10-20	5-10
Sandberg bluegrass	POSE	5-10	5-10	---	5-10	---
bottlebrush squirreltail	SIRY	2-8	2-8	---	2-8	5-10
desert needlegrass	STSP3	---	---	2-8	---	---
Bailey greasewood	SAVEB	15-30	15-30	20-30	15-30	---
Nevada ephedra	EPNE	---	---	---	---	5-10
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8	---
burrobrush	HYMEN3	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	10-20
shadscale	ATCO	15-30	15-30	5-15	15-30	---
spiny hopsage	GRSP	---	---	---	---	10-20
winterfat	EULA5	---	---	2-8	---	---

Range site number	027XY018NV	027XY018NV	027XY050NV	027XY018NV	027XY022NV
Potential production (lb/acre):					
Favorable years	400	400	500	400	400
Normal years	250	250	350	250	200
Unfavorable years	100	100	200	100	50



## 320--JUNG-OLD CAMP-ROCK OUTCROP ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absense of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		JUNG	OLD CAMP	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	X	---
Indian ricegrass	OREY	5-15	5-15	---	---	X	15-30
Sandberg bluegrass	POSE	2-8	2-8	---	---	X	2-15
Thurber needlegrass	STH2	30-40	25-35	---	5-15	X	---
basin wildrye	ELCI2	---	---	---	2-5	---	---
bluebunch wheatgrass	AGSP	---	---	---	40-60	---	---
bluegrass	POA++	---	---	---	2-8	---	---
bottlebrush squirreltail	SIHY	---	---	---	---	X	2-8
arrowleaf balsamroot	BASA3	---	---	---	2-5	---	---
arrowleaf balsamroot	BASA2	---	---	---	---	X	---
tapertip hawksbeard	CRAC2	---	---	---	2-5	X	---
Nevada ephedra	EPNE	---	2-5	---	---	---	---
Wyoming big sagebrush	ARTRW	---	25-35	---	---	X	---
big sagebrush	ARTR2	---	---	---	15-25	---	---
black sagebrush	ARARN	25-35	---	---	---	---	---
bud sagebrush	ARSP5	---	---	---	---	---	15-25
ephedra	EPHED	---	---	---	---	X	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
shadscale	ATCO	---	---	---	---	---	20-35
spiny hopsage	GRSP	---	2-8	---	---	---	---
winterfat	EULA5	---	---	---	---	---	5-10
Utah juniper	JUOS	---	---	---	---	X	---
singleleaf pinyon	PIMO	---	---	---	---	X	---

Range site number	027XY032NV	027XY007NV	none	024XY028NV	027XY081NV	027XY013NV
Potential production (lb/acre):						
Favorable years	500	700		1000	500	600
Normal years	300	500		700	300	450
Unfavorable years	200	300		500	200	250

## 321--JUNG-DESATOYA-ROCA ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		JUNG	DESATOYA	ROCA	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---	---
Indian ricegrass	ORHY	5-15	5-15	---	---	5-15	15-30
Sandberg bluegrass	POSE	2-8	2-8	---	---	2-8	2-15
Thurber needlegrass	STTH2	30-40	30-40	5-15	---	25-35	---
basin wildrye	ELCI2	---	---	2-5	---	---	---
bluebunch wheatgrass	AGSP	---	---	40-60	---	---	---
bluegrass	POA++	---	---	2-8	---	---	---
bottlebrush squirreltail	SIEY	---	---	---	---	---	2-8
arrowleaf balsamroot	BASA3	---	---	2-5	---	---	---
tapertip hawksbeard	CRAC2	---	---	2-5	---	---	---
Nevada ephedra	EPNE	---	---	---	---	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	---	25-35	---
big sagebrush	ARTR2	---	---	15-25	---	---	---
black sagebrush	ARARN	25-35	25-35	---	---	---	---
bud sagebrush	ARSP5	---	---	---	---	---	15-25
mountain big sagebrush	ARVA2	---	---	---	---	---	---
shadscale	ATCO	---	---	---	---	---	20-35
spiny hopsage	GRSP	---	---	---	---	2-8	---
winterfat	EULA5	---	---	---	---	---	5-10

Range site number	027XY032NV	027XY032NV	024XY028NV	none	027XY007NV	027XY013NV
Potential production (lb/acre):						
Favorable years	500	500	1000		700	600
Normal years	300	300	700		500	450
Unfavorable years	200	200	500		300	250

## 322--JUNG-PUETT-BUFFARAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		JUNG	PUETT	BUFFARAN	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---	---
Indian ricegrass	OREY	5-15	10-20	20-25	15-25	---	---
Sandberg bluegrass	POSE	2-8	2-5	2-5	---	---	---
Thurber needlegrass	STH2	30-40	---	---	---	5-15	---
basin wildrye	ELCI2	---	---	---	5-15	2-5	---
bluebunch wheatgrass	AGSP	---	---	---	---	40-60	---
bluegrass	POA++	---	---	---	---	2-8	---
bottlebrush squirreltail	SIBY	---	2-5	2-5	---	---	---
needleandthread	STCO4	---	10-20	5-15	---	---	---
arrowleaf balsamroot	BASA3	---	---	---	---	2-5	---
tapertip hawksbeard	CRAC2	---	---	---	---	2-5	---
Nevada ephedra	EPNE	---	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	---	20-30	---	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---	---
big sagebrush	ARTR2	---	---	---	---	15-25	---
black sagebrush	ARARN	25-35	35-45	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
rabbitbrush	CHRY89	---	---	---	2-5	---	---
shadscale	ATCO	---	2-5	---	---	---	---
spiny hopsage	GRSP	---	---	10-25	10-20	---	---
winterfat	EULA5	---	---	2-5	---	---	---
Range site number		027XY032NV	028BY016NV	027XY008NV	027XY029NV	024XY028NV	none
Potential production (lb/acre):							
Favorable years		500	350	700	800	1000	
Normal years		300	225	500	500	700	
Unfavorable years		200	100	300	300	500	

## 324--JUNG-CLANALPINE-COLBAR ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		JUNG	CLANALPINE	COLBAR	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	X	---	---	---	---
Cusick bluegrass	POCU3	---	X	---	---	---	---
Idaho fescue	FEID	---	X	---	---	---	---
Indian ricegrass	OREY	5-15	---	5-10	5-15	---	---
Sandberg bluegrass	POSE	2-8	X	---	2-8	---	---
Thurber needlegrass	STTH2	30-40	---	---	25-35	---	5-15
basin wildrye	ELCI2	---	---	---	---	---	2-5
bluebunch wheatgrass	AGSP	---	---	---	---	---	40-60
bluegrass	POA++	---	---	---	---	---	2-8
bottlebrush squirreltail	SIEY	---	---	5-10	---	---	---
desert needlegrass	STSP3	---	---	15-25	---	---	---
arrowleaf balsamroot	BASA3	---	X	---	---	---	2-5
lupine	LUPIN	---	X	---	---	---	---
phlox	PHLOX	---	X	---	---	---	---
tapertip hawksbeard	CRAC2	---	X	---	---	---	2-5
Nevada ephedra	EPNE	---	---	5-10	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	20-35	25-35	---	---
big sagebrush	ARTR2	---	---	---	---	---	15-25
black sagebrush	ARARN	25-35	---	---	---	---	---
currant	RIBES	---	X	---	---	---	---
mountain big sagebrush	ARVA2	---	X	---	---	---	---
oceanspray	BOLOD	---	X	---	---	---	---
purple sage	SADOC2	---	---	5-10	---	---	---
spiny hopsage	GRSP	---	---	---	2-8	---	---
Utah juniper	JUOS	---	X	---	---	---	---
singleleaf pinyon	PIMO	---	X	---	---	---	---
Range site number		027XY032NV	027XY080NV	027XY051NV	027XY007NV	none	024XY028NV
Potential production (lb/acre):							
Favorable years		500	350	500	700		1000
Normal years		300	150	350	500		700
Unfavorable years		200	100	200	300		500

## 325--JUNG-OLD CAMP-CLANALPINE ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		JUNG	OLD CAMP	CLANALPINE	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	X	---	---	---
Cusick bluegrass	POCU3	---	---	X	---	---	---
Idaho fescue	FEID	---	---	X	---	---	---
Indian ricegrass	ORHY	5-15	5-15	---	---	5-10	15-30
Sandberg bluegrass	POSE	2-8	2-8	X	---	---	2-15
Thurber needlegrass	STTH2	30-40	25-35	---	---	---	---
bottlebrush squirreltail	SIEY	---	---	---	---	5-10	2-8
desert needlegrass	STSP3	---	---	---	---	15-25	---
arrowleaf balsamroot	BASA3	---	---	X	---	---	---
lupine	LUPIN	---	---	X	---	---	---
phlox	PHLOX	---	---	X	---	---	---
tapertip hawksbeard	CRAC2	---	---	X	---	---	---
Nevada ephedra	EPNE	---	2-5	---	---	5-10	---
Wyoming big sagebrush	ARTRW	---	25-35	---	---	20-35	---
black sagebrush	ARARN	25-35	---	---	---	---	---
bud sagebrush	ARSP5	---	---	---	---	---	15-25
currant	RIBES	---	---	X	---	---	---
mountain big sagebrush	ARVA2	---	---	X	---	---	---
oceanspray	HOLOD	---	---	X	---	---	---
purple sage	SADOC2	---	---	---	---	5-10	---
shadscale	ATCO	---	---	---	---	---	20-35
spiny hopsage	GRSP	---	2-8	---	---	---	---
winterfat	EULA5	---	---	---	---	---	5-10
Utah juniper	JUOS	---	---	X	---	---	---
singleleaf pinyon	PIMO	---	---	X	---	---	---
Range site number		027XY032NV	027XY007NV	027XY080NV	none	027XY051NV	027XY013NV
Potential production (lb/acre):							
Favorable years		500	700	350		500	600
Normal years		300	500	150		350	450
Unfavorable years		200	300	100		200	250

## 330--SETTLEMENT-LOUDERBACK-RUSTIGATE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SETTLEMENT	LOUDERBACK	RUSTIGATE	Inclusion 1	Inclusion 2	Inclusion 3
Baltic rush	JUBA	---	5-10	5-10	---	---	---
alkali bulrush	SCRO	---	---	---	---	10-15	---
alkali sacaton	SPAI	2-10	30-45	30-45	2-10	---	---
basin wildrye	ELCI2	50-60	2-5	2-5	30-45	---	---
cattail	TYPHA	---	---	---	---	20-30	---
creeping spikerush	ELPA3	---	---	---	---	15-25	---
creeping wildrye	ELTR3	5-10	---	---	---	---	---
inland saltgrass	DISPS2	5-10	10-15	10-15	---	---	---
rush	JUNCU	---	---	---	---	5-10	---
sedge	CAREX	---	---	---	---	5-10	---
western wheatgrass	AGSM	---	2-5	2-5	---	---	---
Torrey quailbush	ATTO	---	---	---	30-50	---	---
black greasewood	SAVE4	5-15	---	---	2-10	---	---
fourwing saltbush	ATCA2	---	---	---	2-5	---	---
rubber rabbitbrush	CHNA2	2-5	---	---	---	---	---

Range site number	027XY006NV	027XY005NV	027XY005NV	027XY041NV	027XY001NV	none
Potential production (lb/acre):						
Favorable years	2000	3000	3000	1500	4000	
Normal years	1500	2200	2200	1000	2800	
Unfavorable years	800	1000	1000	600	2000	

## 331--SETTLEMENT-CHUCKLES-RUSTIGATE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SETTLEMENT	CHUCKLES	RUSTIGATE	Inclusion 1	Inclusion 2	Inclusion 3
Baltic rush	JUBA	---	---	5-10	---	---	---
Indian ricegrass	ORHY	---	10-15	---	---	---	---
alkali bulrush	SCRO	---	---	---	---	---	10-15
alkali sacaton	SPAI	2-10	---	30-45	2-10	---	---
basin wildrye	ELCI2	50-60	---	2-5	30-45	---	---
bottlebrush squirreltail	SIHY	---	5-10	---	---	---	---
cattail	TYPHA	---	---	---	---	---	20-30
creeping spikerush	ELPA3	---	---	---	---	---	15-25
creeping wildrye	ELTR3	5-10	---	---	---	---	---
inland saltgrass	DISPS2	5-10	2-5	10-15	---	---	---
rush	JUNCU	---	---	---	---	---	5-10
sedge	CAREX	---	---	---	---	---	5-10
western wheatgrass	AGSM	---	---	2-5	---	---	---
Bailey greasewood	SAVEB	---	0-5	---	---	---	---
Torrey quailbush	ATTO	---	---	---	30-50	---	---
black greasewood	SAVE4	5-15	20-30	---	2-10	---	---
bud sagebrush	ARSP5	---	2-5	---	---	---	---
fourwing saltbush	ATCA2	---	---	---	2-5	---	---
rubber rabbitbrush	CHNA2	2-5	---	---	---	---	---
shadscale	ATCO	---	20-35	---	---	---	---

Range site number	027XY006NV	027XY024NV	027XY005NV	027XY041NV	none	027XY001NV
Potential production (lb/acre):						
Favorable years	2000	500	3000	1500		4000
Normal years	1500	350	2200	1000		2800
Unfavorable years	800	150	1000	600		2000

## 340--SLAW-JUVA-WHOLAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SLAW	JUVA	WHOLAN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	---	10-20	15-25	50-70	---	---
Sandberg bluegrass	POSE	---	5-10	---	---	---	---
alkali sacaton	SPAI	2-10	---	---	---	---	2-10
basin wildrye	ELCI2	30-45	---	---	---	---	50-60
bottlebrush squirreltail	SIHY	---	2-8	5-10	---	---	---
creeping wildrye	ELTR3	---	---	---	---	---	5-10
inland saltgrass	DISPS2	---	---	---	---	2-10	5-10
needleandthread	STCO4	---	---	---	5-15	---	---
other perennial grasses	PPGG	---	---	2-5	---	---	---
globemallow	SPHAE	---	---	2-5	---	---	---
Bailey greasewood	SAVEB	---	15-30	---	---	---	---
Nevada dalea	PSPO	---	---	---	0-5	---	---
Torrey quailbush	ATTO	30-50	---	---	---	---	---
black greasewood	SAVE4	2-10	---	---	---	60-70	5-15
bud sagebrush	ARSP5	---	2-8	2-8	---	---	---
fourwing saltbush	ATCA2	2-5	---	2-5	10-20	---	---
rubber rabbitbrush	CENA2	---	---	---	---	---	2-5
seepweed	SUAED	---	---	---	---	2-8	---
shadscale	ATCO	---	15-30	---	---	2-10	---
spiny hopsage	GRSP	---	---	---	2-5	---	---
winterfat	EULA5	---	---	40-50	2-8	---	---

Range site number	027XY041NV	027XY018NV	028BY011NV	027XY009NV	027XY025NV	027XY006NV
Potential production (lb/acre):						
Favorable years	1500	400	700	700	500	2000
Normal years	1000	250	500	450	350	1500
Unfavorable years	600	100	350	250	200	800



## 341--SLAW-CHUCKLES ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		SLAW	CHUCKLES	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	---	---	---	---	10-20
Sandberg bluegrass	POSE	---	---	---	---	5-10
alkali sacaton	SPAI	2-10	---	2-10	---	---
basin wildrye	ELCI2	30-45	---	50-60	60-80	---
bottlebrush squirreltail	SIHY	---	---	---	---	2-8
creeping wildrye	ELTR3	---	---	5-10	5-15	---
inland saltgrass	DISPS2	---	2-10	5-10	---	---
western wheatgrass	AGSM	---	---	---	5-15	---
Bailey greasewood	SAVEB	---	---	---	---	15-30
Torrey quailbush	ATTO	30-50	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	5-15	---
black greasewood	SAVE4	2-10	60-70	5-15	---	---
bud sagebrush	ARSP5	---	---	---	---	2-8
fourwing saltbush	ATCA2	2-5	---	---	---	---
rubber rabbitbrush	CHNA2	---	---	2-5	---	---
seepweed	SUAED	---	2-8	---	---	---
shadscale	ATCO	---	2-10	---	---	15-30
Range site number		027XY041NV	027XY025NV	027XY006NV	027XY003NV	027XY018NV
Potential production (lb/acre):						
Favorable years		1500	500	2000	3500	400
Normal years		1000	350	1500	2000	250
Unfavorable years		600	200	800	1000	100

## 342--SLAW-MAZUMA-HESSING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SLAW	MAZUMA	HESSING	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	---	---	15-30	10-20	---	10-20
Sandberg bluegrass	POSE	---	---	2-15	5-10	---	5-10
alkali sacaton	SPAI	2-10	---	---	---	---	---
basin wildrye	ELCI2	30-45	---	---	---	---	---
bottlebrush squirreltail	SINY	---	---	2-8	2-8	---	2-8
inland saltgrass	DISPS2	---	2-10	---	---	2-10	---
Bailey greasewood	SAVEB	---	---	---	15-30	---	15-30
Torrey quailbush	ATTO	30-50	---	---	---	---	---
black greasewood	SAVE4	2-10	60-70	---	---	60-70	---
bud sagebrush	ARSP5	---	---	15-25	2-8	---	2-8
fourwing saltbush	ATCA2	2-5	---	---	---	---	---
seepweed	SUAED	---	2-8	---	---	2-8	---
shadscale	ATCO	---	2-10	20-35	15-30	2-10	15-30
winterfat	EULA5	---	---	5-10	---	---	---

Range site number	027XY041NV	027XY025NV	027XY013NV	027XY018NV	027XY025NV	027XY018NV
Potential production (lb/acre):						
Favorable years	1500	500	600	400	500	400
Normal years	1000	350	450	250	350	250
Unfavorable years	600	200	250	100	200	100

## 343--SLAW-TROCKEN-CHUCKLES ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SLAW	TROCKEN	CHUCKLES	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	---	---	---	5-10	25-45	---
alkali sacaton	SPAI	2-10	2-10	---	---	---	---
basin wildrye	ELCI2	30-45	30-45	---	---	---	---
bottlebrush squirreltail	SIHY	---	---	---	5-10	---	---
desert needlegrass	STSP3	---	---	---	---	2-8	---
inland saltgrass	DISPS2	---	---	2-10	---	---	2-10
Bailey greasewood	SAVEB	---	---	---	---	20-30	---
Nevada ephedra	EPNE	---	---	---	5-10	---	---
Torrey quailbush	ATTO	30-50	30-50	---	---	---	---
black greasewood	SAVE4	2-10	2-10	60-70	---	---	60-70
bud sagebrush	ARSP5	---	---	---	---	2-8	---
burrobrush	HYMEN3	---	---	---	5-10	---	---
fourwing saltbush	ATCA2	2-5	2-5	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---	---
rubber rabbitbrush	CENA2	---	---	---	10-20	---	---
seepweed	SUAED	---	---	2-8	---	---	2-8
shadscale	ATCO	---	---	2-10	---	5-15	2-10
spiny hopsage	GRSP	---	---	---	10-20	---	---
winterfat	EULA5	---	---	---	---	2-8	---
Range site number		027XY041NV	027XY041NV	027XY025NV	027XY022NV	027XY050NV	027XY025NV
Potential production (lb/acre):							
Favorable years		1500	1500	500	400	500	500
Normal years		1000	1000	350	200	350	350
Unfavorable years		600	600	200	50	200	200

## 344--SLAW-RAGTOWN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		SLAW	RAGTOWN	Inclusion 1	Inclusion 2
Baltic rush	JUBA	---	---	---	5-10
Indian ricegrass	OREY	---	---	10-15	---
alkali sacaton	SPAI	2-10	---	---	30-45
basin wildrye	ELCI2	30-45	---	---	2-5
bottlebrush squirreltail	SIHY	---	---	5-10	---
inland saltgrass	DISPS2	---	2-10	2-5	10-15
western wheatgrass	AGSM	---	---	---	2-5
Bailey greasewood	SAVEB	---	---	0-5	---
Torrey quailbush	ATTO	30-50	---	---	---
black greasewood	SAVE4	2-10	60-70	20-30	---
bud sagebrush	ARSP5	---	---	2-5	---
fourwing saltbush	ATCA2	2-5	---	---	---
seepweed	SUAED	---	2-8	---	---
shadscale	ATCO	---	2-10	20-35	---

Range site number	027XY041NV	027XY025NV	027XY024NV	027XY005NV
Potential production (lb/acre):				
Favorable years	1500	500	500	3000
Normal years	1000	350	350	2200
Unfavorable years	600	200	150	1000

## 350--RICERT-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		RICERT	PINEVAL	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	15-30	20-25	10-20	10-20
Sandberg bluegrass	POSE	2-15	2-5	5-10	5-10
bottlebrush squirreltail	SINY	2-8	2-5	2-8	2-8
needleandthread	STCO4	---	5-15	---	---
Bailey greasewood	SAVEB	---	---	15-30	15-30
Nevada ephedra	EPNE	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	20-30	---	---
bud sagebrush	ARSP5	15-25	---	2-8	2-8
shadscale	ATCO	20-35	---	15-30	15-30
spiny hopsage	GRSP	---	10-25	---	---
winterfat	EULA5	5-10	2-5	---	---
Range site number		027XY013NV	027XY008NV	027XY018NV	027XY018NV
Potential production (lb/acre):					
Favorable years		600	700	400	400
Normal years		450	500	250	250
Unfavorable years		250	300	100	100

## 351--RICERT-CHILPER-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		RICERT	CHILPER	PINEVAL	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	15-30	15-30	20-25	10-20	15-25	15-30	15-25
Sandberg bluegrass	POSE	2-15	2-15	2-5	5-10	---	2-15	---
basin wildrye	ELCI2	---	---	---	---	5-15	---	5-15
bottlebrush squirreltail	SIRY	2-8	2-8	2-5	2-8	---	2-8	---
needleandthread	STCO4	---	---	5-15	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	15-30	---	---	---
Nevada ephedra	EPNE	---	---	2-5	---	---	---	---
Wyoming big sagebrush	ARTRW	---	---	20-30	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---	20-30
bud sagebrush	ARSP5	15-25	15-25	---	2-8	---	15-25	---
rabbitbrush	CHRY5	---	---	---	---	2-5	---	2-5
shadscale	ATCO	20-35	20-35	---	15-30	---	20-35	---
spiny hopsage	GRSP	---	---	10-25	---	10-20	---	10-20
winterfat	EULA5	5-10	5-10	2-5	---	---	5-10	---

Range site number	027XY013NV	027XY013NV	027XY008NV	027XY018NV	027XY029NV	027XY013NV	027XY029NV
Potential production (lb/acre):							
Favorable years	600	600	700	400	800	600	800
Normal years	450	450	500	250	500	450	500
Unfavorable years	250	250	300	100	300	250	300

## 352--RICERT-DESATOYA-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		RICERT	DESATOYA	PINEVAL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORBY	15-30	5-15	20-25	10-20	15-25	15-30
Sandberg bluegrass	POSE	2-15	2-8	2-5	5-10	---	2-15
Thurber needlegrass	STTH2	---	30-40	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-8	---	2-5	2-8	---	2-8
needleandthread	STCO4	---	---	5-15	---	---	---
Bailey greasewood	SAVEB	---	---	---	15-30	---	---
Nevada ephedra	EPNE	---	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	---	20-30	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
black sagebrush	ARARN	---	25-35	---	---	---	---
bud sagebrush	ARSP5	15-25	---	---	2-8	---	15-25
rabbitbrush	CHRS9	---	---	---	---	2-5	---
shadscale	ATCO	20-35	---	---	15-30	---	20-35
spiny hopsage	GRSP	---	---	10-25	---	10-20	---
winterfat	EULA5	5-10	---	2-5	---	---	5-10

Range site number	027XY013NV	027XY032NV	027XY008NV	027XY018NV	027XY029NV	027XY013NV
Potential production (lb/acre):						
Favorable years	600	500	700	400	800	600
Normal years	450	300	500	250	500	450
Unfavorable years	250	200	300	100	300	250

## 353--RICERT-TROCKEN-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		RICERT	TROCKEN	PINEVAL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	25-45	20-25	15-25	15-30	10-20
Sandberg bluegrass	POSE	5-10	---	2-5	---	2-15	5-10
basin wildrye	ELCI2	---	---	---	5-15	---	---
bottlebrush squirreltail	SIHY	2-8	---	2-5	---	2-8	2-8
desert needlegrass	STSP3	---	2-8	---	---	---	---
needleandthread	STCO4	---	---	5-15	---	---	---
Bailey greasewood	SAVEB	15-30	20-30	---	---	---	15-30
Nevada ephedra	EPNE	---	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	---	20-30	---	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---	---
bud sagebrush	ARSP5	2-8	2-8	---	---	15-25	2-8
rabbitbrush	CHRY59	---	---	---	2-5	---	---
shadscale	ATCO	15-30	5-15	---	---	20-35	15-30
spiny hopsage	GRSP	---	---	10-25	10-20	---	---
winterfat	EULAS	---	2-8	2-5	---	5-10	---

Range site number	027XY018NV	027XY050NV	027XY008NV	027XY029NV	027XY013NV	027XY018NV
Potential production (lb/acre):						
Favorable years	400	500	700	800	600	400
Normal years	250	350	500	500	450	250
Unfavorable years	100	200	300	300	250	100



## 358--RICERT-DESATOYA-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		RICERT	DESATOYA	TROCKEN	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	15-30	5-15	15-30	10-20	15-25
Sandberg bluegrass	POSE	2-15	2-8	2-15	5-10	---
Thurber needlegrass	STTH2	---	30-40	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-8	---	2-8	2-8	---
Bailey greasewood	SAVEB	---	---	---	15-30	---
basin big sagebrush	ARTRT	---	---	---	---	20-30
black sagebrush	ARARN	---	25-35	---	---	---
bud sagebrush	ARSP5	15-25	---	15-25	2-8	---
rabbitbrush	CHRY9	---	---	---	---	2-5
shadscale	ATCO	20-35	---	20-35	15-30	---
spiny hopsage	GRSP	---	---	---	---	10-20
winterfat	EULA5	5-10	---	5-10	---	---

Range site number	027XY013NV	027XY032NV	027XY013NV	027XY018NV	027XY029NV
Potential production (lb/acre):					
Favorable years	600	500	600	400	800
Normal years	450	300	450	250	500
Unfavorable years	250	200	250	100	300

## 359--RICERT-CELETON-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		RICERT	CELETON	TROCKEN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	15-25	25-45	---	5-10	15-25
Sandberg bluegrass	POSE	5-10	---	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-8	---	---	---	5-10	---
desert needlegrass	STSP3	---	2-10	2-8	---	---	---
inland saltgrass	DISPS2	---	---	---	2-10	---	---
Bailey greasewood	SAVEB	15-30	---	20-30	---	---	---
Nevada ephedra	EPNE	---	2-5	---	---	5-10	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
black greasewood	SAVE4	---	---	---	60-70	---	---
bud sagebrush	ARSP5	2-8	2-8	2-8	---	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rabbitbrush	CHRY59	---	---	---	---	---	2-5
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
seepweed	SUAED	---	---	---	2-8	---	---
shadscale	ATCO	15-30	30-40	5-15	2-10	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	10-20
winterfat	EULA5	---	2-8	2-8	---	---	---

Range site number	027XY018NV	027XY027NV	027XY050NV	027XY025NV	027XY022NV	027XY029NV
Potential production (lb/acre):						
Favorable years	400	200	500	500	400	800
Normal years	250	100	350	350	200	500
Unfavorable years	100	50	200	200	50	300

## 360--RICERT-TROCKEN-REBEL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		RICERT	TROCKEN	REBEL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	15-30	15-30	20-25	15-25	15-25	15-30
Sandberg bluegrass	POSE	2-15	2-15	2-5	2-5	---	2-15
bottlebrush squirreltail	SIHY	2-8	2-8	2-5	5-10	---	2-8
desert needlegrass	STSP3	---	---	---	---	2-10	---
needleandthread	STCO4	---	---	5-15	---	---	---
Nevada ephedra	EPNE	---	---	2-5	---	2-5	---
Wyoming big sagebrush	ARTRW	---	---	20-30	---	---	---
black sagebrush	ARARN	---	---	---	15-25	---	---
bud sagebrush	ARSP5	15-25	15-25	---	---	2-8	15-25
desert snowberry	SYLO	---	---	---	2-5	---	---
shadscale	ATCO	20-35	20-35	---	5-15	30-40	20-35
spiny hopsage	GRSP	---	---	10-25	---	---	---
winterfat	EULA5	5-10	5-10	2-5	---	2-8	5-10

Range site number	027XY013NV	027XY013NV	027XY008NV	027XY048NV	027XY027NV	027XY013NV
Potential production (lb/acre):						
Favorable years	600	600	700	200	200	600
Normal years	450	450	500	100	100	450
Unfavorable years	250	250	300	50	50	250

## 370--DUCO-CLANALPINE-JUNG ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		DUCO	CLANALPINE	JUNG	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	X	X	---	---	---	---
Cusick bluegrass	POCU3	---	X	---	---	---	---
Idaho fescue	FEID	---	X	---	---	---	---
Indian ricegrass	OREY	X	---	5-15	---	---	5-15
Sandberg bluegrass	POSE	X	X	2-8	---	---	2-8
Thurber needlegrass	STTH2	X	---	30-40	---	---	25-35
basin wildrye	ELCI2	---	---	---	---	60-80	---
bottlebrush squirreltail	SIHY	X	---	---	---	---	---
creeping wildrye	ELTR3	---	---	---	---	5-15	---
western wheatgrass	AGSM	---	---	---	---	5-15	---
arrowleaf balsamroot	BASA3	---	X	---	---	---	---
arrowleaf balsamroot	BASA2	X	---	---	---	---	---
lupine	LUPIN	---	X	---	---	---	---
phlox	PHLOX	---	X	---	---	---	---
tapertip hawksbeard	CRAC2	X	X	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	---	2-5
Wyoming big sagebrush	ARTRW	X	---	---	---	---	25-35
basin big sagebrush	ARTRT	---	---	---	---	5-15	---
black sagebrush	ARARN	---	---	25-35	---	---	---
currant	RIBES	---	X	---	---	---	---
ephedra	EPHED	X	---	---	---	---	---
mountain big sagebrush	ARVA2	---	X	---	---	---	---
oceanspray	HOLQD	---	X	---	---	---	---
spiny hopsage	GRSP	---	---	---	---	---	2-8
Utah juniper	JUOS	X	X	---	---	---	---
singleleaf pinyon	PIMO	X	X	---	---	---	---
Range site number		027XY081NV	027XY080NV	027XY032NV	none	027XY003NV	027XY007NV
Potential production (lb/acre):							
Favorable years		500	350	500		3500	700
Normal years		300	150	300		2000	500
Unfavorable years		200	100	200		1000	300

## 371--DUCO-CLANALPINE-OLD CAMP ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		DUCO	CLANALPINE	OLD CAMP	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	X	X	---	---	---	---
Cusick bluegrass	POCU3	---	X	---	---	---	---
Idaho fescue	FEID	---	X	---	---	---	---
Indian ricegrass	ORRY	X	---	5-15	---	---	5-15
Sandberg bluegrass	POSE	X	X	2-8	---	---	2-8
Thurber needlegrass	STTE2	X	---	25-35	---	30-40	30-40
bluegrass	POA++	---	---	---	---	2-8	---
bottlebrush squirreltail	SIRY	X	---	---	---	---	---
arrowleaf balsamroot	BASA3	---	X	---	---	---	---
arrowleaf balsamroot	BASA2	X	---	---	---	---	---
lupine	LUPIN	---	X	---	---	---	---
phlox	PHLOX	---	X	---	---	---	---
tapertip hawksbeard	CRAC2	X	X	---	---	---	---
Nevada ephedra	EPNE	---	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	X	---	25-35	---	---	---
big sagebrush	ARTR2	---	---	---	---	20-30	---
black sagebrush	ARARN	---	---	---	---	---	25-35
currant	RIBES	---	X	---	---	---	---
ephedra	EPHED	X	---	---	---	---	---
mountain big sagebrush	ARVA2	---	X	---	---	---	---
oceanspray	HOLOD	---	X	---	---	---	---
spiny hopsage	GRSP	---	---	2-8	---	---	---
Utah juniper	JUOS	X	X	---	---	---	---
singleleaf pinyon	PIMO	X	X	---	---	---	---

Range site number	027XY081NV	027XY080NV	027XY007NV	none	027XY054NV	027XY032NV
Potential production (lb/acre):						
Favorable years	500	350	700		900	500
Normal years	300	150	500		700	300
Unfavorable years	200	100	300		500	200

## 373--DUCO-ITCA-PUETT ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		DUCO	ITCA	PUETT	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	X	X	---	---	---	X
Cusick bluegrass	POCU3	---	X	---	---	---	---
Idaho fescue	FEID	---	X	---	---	---	---
Indian ricegrass	ORHY	X	---	20-30	---	5-15	X
Sandberg bluegrass	POSE	X	X	---	---	2-8	X
Thurber needlegrass	STTH2	X	---	---	---	30-40	X
bottlebrush squirreltail	SIRY	X	---	---	---	---	X
inland saltgrass	DISPS2	---	---	2-5	---	---	---
arrowleaf balsamroot	BASA3	---	X	---	---	---	---
arrowleaf balsamroot	BASA2	X	---	---	---	---	X
lupine	LUPIN	---	X	---	---	---	---
phlox	PHLOX	---	X	---	---	---	---
tapertip hawksbeard	CRAC2	X	X	---	---	---	X
Wyoming big sagebrush	ARTRW	X	---	---	---	---	X
black greasewood	SAVE4	---	---	30-50	---	---	---
black sagebrush	ARARN	---	---	---	---	25-35	---
currant	RIBES	---	X	---	---	---	---
ephedra	EPHED	X	---	---	---	---	X
fourwing saltbush	ATCA2	---	---	2-5	---	---	---
mountain big sagebrush	ARVA2	---	X	---	---	---	---
oceanspray	HOLOD	---	X	---	---	---	---
shadscale	ATCO	---	---	2-5	---	---	---
Utah juniper	JUOS	X	X	---	---	---	X
singleleaf pinyon	PIMO	X	X	---	---	---	X

Range site number	027XY081NV	027XY080NV	027XY016NV	none	027XY032NV	027XY081NV
Potential production (lb/acre):						
Favorable years	500	350	500		500	500
Normal years	300	150	300		300	300
Unfavorable years	200	100	150		200	200

## 380--ITCA-CLANALPINE-ROCK OUTCROP ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ITCA	CLANALPINE	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	X	X	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---
Idaho fescue	FEID	---	---	---	15-25	---	---
Indian ricegrass	ORHY	X	---	---	---	5-15	---
Sandberg bluegrass	POSE	X	X	---	---	2-8	---
Thurber needlegrass	STTH2	X	---	---	---	30-40	30-40
Webber ricegrass	STWE	---	---	---	2-5	---	---
basin wildrye	ELCI2	X	X	---	---	---	---
bluebunch wheatgrass	AGSP	X	X	---	2-5	---	---
bluegrass	POA++	---	---	---	5-10	---	2-8
bottlebrush squirreltail	SIHY	X	X	---	---	---	---
muttongrass	POFE	---	X	---	---	---	---
pine bluegrass	POSC	---	---	---	---	---	---
arrowleaf balsamroot	BASA3	X	X	---	---	---	---
goldenweed	HAPLO2	---	---	---	2-5	---	---
tapertip hawksbeard	CRAC2	X	X	---	---	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---
antelope bitterbrush	PUTR2	X	X	---	---	---	---
big sagebrush	ARTR2	---	---	---	---	---	20-30
black sagebrush	ARARN	---	---	---	---	25-35	---
curlleaf mountainmahogany	CELE3	---	X	---	---	---	---
ephedra	EPHED	X	---	---	---	---	---
low sagebrush	ARAR8	---	---	---	---	---	---
mountain big sagebrush	ARVA2	X	X	---	---	---	---
sagebrush	ARTEM	---	---	---	25-40	---	---
serviceberry	AMELA	X	X	---	---	---	---
snowberry	SYMPH	---	X	---	---	---	---
Utah juniper	JUOS	X	X	---	---	---	---
singleleaf pinyon	FIMO	X	X	---	---	---	---

Range site number	028BY062NV	028BY058NV	none	024XY016NV	027XY032NV	027XY054NV
Potential production (lb/acre):						
Favorable years	700	500		350	500	900
Normal years	500	300		250	300	700
Unfavorable years	300	200		150	200	500

## 381--ITCA-RELUCTAN-WALTI ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		ITCA	RELUCTAN	WALTI	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	X	---	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---	---
Idaho fescue	FEID	---	20-40	25-35	---	---	---	---
Indian ricegrass	OREY	X	---	---	---	---	---	---
Nevada bluegrass	PONE3	---	---	---	15-25	---	---	---
Sandberg bluegrass	POSE	X	---	---	---	---	---	---
Thurber needlegrass	STTH2	X	2-8	---	---	5-15	---	---
basin wildrye	ELCI2	X	2-15	---	---	2-5	60-80	---
bluebunch wheatgrass	AGSP	X	20-40	---	---	40-60	---	---
bluegrass	POA++	---	---	5-15	---	2-8	---	---
bottlebrush squirreltail	SIHY	X	---	---	---	---	---	---
creeping wildrye	ELTR3	---	---	---	---	---	5-15	---
meadow barley	HOBR2	---	---	---	2-5	---	---	---
muttongrass	POFE	---	---	---	---	---	---	---
needlegrass	STIPA	---	---	5-10	---	---	---	---
rush	JUNCU	---	---	---	10-15	---	---	---
sedge	CAREX	---	---	---	20-35	---	---	---
western needlegrass	STOC2	---	---	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---	5-15	---
arrowleaf balsamroot	BASA3	X	1-5	---	---	2-5	---	---
helianthella	HELIA	---	1-2	---	---	---	---	---
tapertip hawksbeard	CRAC2	X	1-5	---	---	2-5	---	---
white stone seed	LIRU4	---	1-2	---	---	---	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	---
antelope bitterbrush	PUTR2	X	---	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	5-15	---
big sagebrush	ARTR2	---	---	---	---	15-25	---	---
ephedra	EPHED	X	---	---	---	---	---	---
low sagebrush	ARAR8	---	---	20-30	---	---	---	---
mountain big sagebrush	ARVA2	X	15-25	---	---	---	---	---
serviceberry	AMELA	X	---	---	---	---	---	---
Utah juniper	JUOS	X	---	---	---	---	---	---
singleleaf pinyon	FIMO	X	---	---	---	---	---	---

Range site number      028BY062NV    024XY021NV    027XY046NV    027XY004NV    024XY028NV    027XY003NV    none

Potential production (lb/acre):

Favorable years	700	1400	600	2500	1000	3500
Normal years	500	1000	400	1500	700	2000
Unfavorable years	300	700	250	1000	500	1000



## 390--DEFLER-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		DEFLER	PINEVAL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	40-50	20-25	20-25	15-30	40-50
Sandberg bluegrass	POSE	---	2-5	2-5	2-15	---
bottlebrush squirreltail	SINY	2-5	2-5	2-5	2-8	2-5
needleandthread	STCO4	5-15	5-15	5-15	---	5-15
globemallow	SPHAE	2-5	---	---	---	2-5
Nevada ephedra	EFNE	---	2-5	2-5	---	---
Wyoming big sagebrush	ARTRW	---	20-30	20-30	---	---
bud sagebrush	ARSP5	5-15	---	---	15-25	5-15
shadscale	ATCO	---	---	---	20-35	---
spiny hopsage	GRSP	---	10-25	10-25	---	---
winterfat	EULA5	25-30	2-5	2-5	5-10	25-30
Range site number		027XY014NV	027XY008NV	027XY008NV	027XY013NV	027XY014NV
Potential production (lb/acre):						
Favorable years		700	700	700	600	700
Normal years		500	500	500	450	500
Unfavorable years		350	300	300	250	350

## 391--DEFLER-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		DEFLER	TROCKEN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	40-50	15-30	15-25	10-20	---
Sandberg bluegrass	POSE	---	2-15	---	5-10	---
basin wildrye	ELCI2	---	---	5-15	---	---
bottlebrush squirreltail	SINY	2-5	2-8	---	2-8	---
inland saltgrass	DISPS2	---	---	---	---	2-10
needleandthread	STCO4	5-15	---	---	---	---
globemallow	SPHAE	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	15-30	---
basin big sagebrush	ARTRT	---	---	20-30	---	---
black greasewood	SAVE4	---	---	---	---	60-70
bud sagebrush	ARSP5	5-15	15-25	---	2-8	---
rabbitbrush	CHRY9	---	---	2-5	---	---
seepweed	SUAED	---	---	---	---	2-8
shadscale	ATCO	---	20-35	---	15-30	2-10
spiny hopsage	GRSP	---	---	10-20	---	---
winterfat	EULA5	25-30	5-10	---	---	---

Range site number	027XY014NV	027XY013NV	027XY029NV	027XY018NV	027XY025NV
Potential production (lb/acre):					
Favorable years	700	600	800	400	500
Normal years	500	450	500	250	350
Unfavorable years	350	250	300	100	200

## 400--CHUCKLES-PLAYAS COMPLEX

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		CHUCKLES	PLAYAS	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	10-15	---	---	---	20-30
alkali sacaton	SPAI	---	---	2-10	---	---
basin wildrye	ELCI2	---	---	30-45	---	---
bottlebrush squirreltail	SIHY	5-10	---	---	---	---
inland saltgrass	DISPS2	2-5	---	---	2-10	---
needleandthread	STCO4	---	---	---	---	5-10
Bailey greasewood	SAVEB	0-5	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	10-20
Torrey quailbush	ATTO	---	---	30-50	---	---
basin big sagebrush	ARTRT	---	---	---	---	2-8
black greasewood	SAVE4	20-30	---	2-10	60-70	---
bud sagebrush	ARSP5	2-5	---	---	---	---
fourwing saltbush	ATCA2	---	---	2-5	---	20-30
seepweed	SUAED	---	---	---	2-8	---
shadscale	ATCO	20-35	---	---	2-10	---
Range site number		027XY024NV	none	027XY041NV	027XY025NV	027XY053NV
Potential production (lb/acre):						
Favorable years		500		1500	500	600
Normal years		350		1000	350	500
Unfavorable years		150		600	200	300

## 401--CHUCKLES-BANGO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		CHUCKLES	BANGO	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-15	10-20	5-10	---	25-45
Sandberg bluegrass	POSE	---	5-10	---	---	---
bottlebrush squirreltail	SIEY	5-10	2-8	5-10	---	---
desert needlegrass	STSP1	---	---	---	---	2-8
inland saltgrass	DISPS2	2-5	---	---	2-10	---
Bailey greasewood	SAVEB	0-5	15-30	---	---	20-30
Nevada ephedra	EPNE	---	---	5-10	---	---
black greasewood	SAVE4	20-30	---	---	60-70	---
bud sagebrush	ARSP5	2-5	2-8	---	---	2-8
burrobrush	HYMEN3	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	---	---
seepweed	SUAED	---	---	---	2-8	---
shadscale	ATCO	20-35	15-30	---	2-10	5-15
spiny hopsage	GRSP	---	---	10-20	---	---
winterfat	EULAS	---	---	---	---	2-8
Range site number		027XY024NV	027XY018NV	027XY022NV	027XY025NV	027XY050NV
Potential production (lb/acre):						
Favorable years		500	400	400	500	500
Normal years		350	250	200	350	350
Unfavorable years		150	100	50	200	200

## 402--CHUCKLES-PLAYAS-SLAW ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		CHUCKLES	PLAYAS	SLAW	Inclusion 1	Inclusion 2	Inclusion 3
Baltic rush	JUBA	---	---	---	---	---	5-10
Indian ricegrass	OREY	10-15	---	---	---	---	---
alkali sacaton	SPAI	---	---	2-10	2-10	---	30-45
basin wildrye	ELCI2	---	---	30-45	50-60	---	2-5
bottlebrush squirreltail	SIEY	5-10	---	---	---	---	---
creeping wildrye	ELTR3	---	---	---	5-10	---	---
inland saltgrass	DISPS2	2-5	---	---	5-10	2-10	10-15
western wheatgrass	AGSM	---	---	---	---	---	2-5
Bailey greasewood	SAVES	0-5	---	---	---	---	---
Torrey quailbush	ATTO	---	---	30-50	---	---	---
black greasewood	SAVE4	20-30	---	2-10	5-15	60-70	---
bud sagebrush	ARSP5	2-5	---	---	---	---	---
fourwing saltbush	ATCA2	---	---	2-5	---	---	---
rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---
seepweed	SUAED	---	---	---	---	2-8	---
shadscale	ATCO	20-35	---	---	---	2-10	---

Range site number	027XY024NV	none	027XY041NV	027XY006NV	027XY025NV	027XY005NV
Potential production (lb/acre):						
Favorable years	500		1500	2000	500	3000
Normal years	350		1000	1500	350	2200
Unfavorable years	150		600	800	200	1000

## 404--CHUCKLES-SETTLEMENT-REBEL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		CHUCKLES	SETTLEMENT	REBEL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-15	---	20-25	20-25	5-15	15-25
Sandberg bluegrass	POSE	---	---	2-5	2-5	2-8	2-5
Thurber needlegrass	STTE2	---	---	---	---	30-40	---
alkali sacaton	SPAI	---	2-10	---	---	---	---
basin wildrye	ELCI2	---	50-60	---	---	---	---
bottlebrush squirreltail	SIHY	5-10	---	2-5	2-5	---	5-10
creeping wildrye	ELTR3	---	5-10	---	---	---	---
inland saltgrass	DISPS2	2-5	5-10	---	---	---	---
needleandthread	STCO4	---	---	5-15	5-15	---	---
Bailey greasewood	SAVEB	0-5	---	---	---	---	---
Nevada ephedra	EPNE	---	---	2-5	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	20-30	20-30	---	---
black greasewood	SAVE4	20-30	5-15	---	---	---	---
black sagebrush	ARARN	---	---	---	---	25-35	15-25
bud sagebrush	ARSP5	2-5	---	---	---	---	---
desert snowberry	SYLO	---	---	---	---	---	2-5
rubber rabbitbrush	CHNA2	---	2-5	---	---	---	---
shadscale	ATCO	20-35	---	---	---	---	5-15
spiny hopsage	GRSP	---	---	10-25	10-25	---	---
winterfat	EULA5	---	---	2-5	2-5	---	---

Range site number	027XY024NV	027XY006NV	027XY008NV	027XY008NV	027XY032NV	027XY048NV
Potential production (lb/acre):						
Favorable years	500	2000	700	700	500	200
Normal years	350	1500	500	500	300	100
Unfavorable years	150	800	300	300	200	50

## 410--BUFFARAN-DESATOYA ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BUFFARAN	SETTLEMENT	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	20-25	5-15	20-25	5-15	15-25
Sandberg bluegrass	POSE	2-5	2-8	2-5	2-8	2-5
Thurber needlegrass	STH2	---	30-40	---	30-40	---
bottlebrush squirreltail	SIHY	2-5	---	2-5	---	5-10
needleandthread	STCO4	5-15	---	5-15	---	---
Nevada ephedra	EPNE	2-5	---	2-5	---	---
Wyoming big sagebrush	ARTRW	20-30	---	20-30	---	---
black sagebrush	ARARN	---	25-35	---	25-35	15-25
spiny hopsage	GRSP	10-25	---	10-25	---	---
winterfat	EULA5	2-5	---	2-5	---	---
shadscale	ATCO	---	---	---	---	5-15

Range site number	027XY008NV	027XY032NV	027XY008NV	027XY032NV	027XY048NV
Potential production (lb/acre):					
Favorable years	700	500	700	500	200
Normal years	500	300	500	300	100
Unfavorable years	300	200	300	200	50

## 411--BUFFARAN-REBEL-PUETT ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BUFFARAN	REBEL	PUETT	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	20-25	20-25	10-20	15-30	40-50	25-45
Sandberg bluegrass	POSE	2-5	2-5	2-5	---	---	---
bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---	2-5	---
desert needlegrass	STSP3	---	---	---	---	---	2-8
needleandthread	STCO4	5-15	5-15	10-20	5-10	5-15	---
thickspike wheatgrass	AGDA	---	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---	---
wheatgrass	AGROP	---	---	---	5-15	---	---
globemallow	SPHAE	---	---	---	---	2-5	---
Bailey greasewood	SAVEB	---	---	---	---	---	20-30
Nevada ephedra	EFNE	2-5	2-5	---	---	---	---
Wyoming big sagebrush	ARTRW	20-30	20-30	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	15-25	---	---
black sagebrush	ARARN	---	---	35-45	---	---	---
bud sagebrush	ARSP5	---	---	---	---	5-15	2-8
fourwing saltbush	ATCA2	---	---	---	2-8	---	---
shadscale	ATCO	---	---	2-5	---	---	5-15
spiny hopsage	GRSP	10-25	10-25	---	5-10	---	---
winterfat	EULA5	2-5	2-5	---	---	25-30	2-8
Range site number							
		027XY008NV	027XY008NV	028BY016NV	027XY045NV	027XY014NV	027XY050NV
Potential production (lb/acre):							
Favorable years		700	700	350	800	700	500
Normal years		500	500	225	600	500	350
Unfavorable years		300	300	100	400	350	200



## 420--TROCKEN-HESSING-DUN GLEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		TROCKEN	HESSING	DUN GLEN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-30	15-30	15-30	15-25	---	20-30
Sandberg bluegrass	POSE	2-15	2-15	2-15	---	---	---
basin wildrye	ELCI2	---	---	---	5-15	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	---	---	---
inland saltgrass	DISPS2	---	---	---	---	2-10	---
needleandthread	STCO4	---	---	---	---	---	5-15
Nevada dalea	PAPO	---	---	---	---	---	2-8
basin big sagebrush	ARTRT	---	---	---	20-30	---	---
black greasewood	SAVE4	---	---	---	---	60-70	---
bud sagebrush	ARSP5	15-25	15-25	15-25	---	---	---
fourwing saltbush	ATCA2	---	---	---	---	---	15-25
hairy horsebrush	TECO2	---	---	---	---	---	25-35
littleleaf horsebrush	TEGL	---	---	---	---	---	2-5
rabbitbrush	CHRY59	---	---	---	2-5	---	---
seepweed	SUAED	---	---	---	---	2-8	---
shadscale	ATCO	20-35	20-35	20-35	---	2-10	---
spiny hopsage	GRSP	---	---	---	10-20	---	---
winterfat	EULA5	5-10	5-10	5-10	---	---	---
Range site number		027XY013NV	027XY013NV	027XY013NV	027XY029NV	027XY025NV	027XY023NV
Potential production (lb/acre):							
Favorable years		600	600	600	800	500	700
Normal years		450	450	450	500	350	500
Unfavorable years		250	250	250	300	200	300

## 422--TROCKEN-HESSING-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		TROCKEN	HESSING	PINEVAL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-30	15-30	20-25	---	15-25	40-50
Sandberg bluegrass	POSE	2-15	2-15	2-5	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-5	---	---	2-5
inland saltgrass	DISPS2	---	---	---	2-10	---	---
needleandthread	STCO4	---	---	5-15	---	---	5-15
globemallow	SPHAE	---	---	---	---	---	2-5
Nevada ephedra	EFNE	---	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	---	20-30	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
black greasewood	SAVE4	---	---	---	60-70	---	---
bud sagebrush	ARSP5	15-25	15-25	---	---	---	5-15
rabbitbrush	CHRS9	---	---	---	---	2-5	---
seepweed	SUAED	---	---	---	2-8	---	---
shadscale	ATCO	20-35	20-35	---	2-10	---	---
spiny hopsage	GRSP	---	---	10-25	---	10-20	---
winterfat	EULA5	5-10	5-10	2-5	---	---	25-30
Range site number		027XY013NV	027XY013NV	027XY008NV	027XY025NV	027XY029NV	027XY014NV
Potential production (lb/acre):							
Favorable years		600	600	700	500	800	700
Normal years		450	450	500	350	500	500
Unfavorable years		250	250	300	200	300	350

## 423--TROCKEN-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		TROCKEN	BLUEWING	TROCKEN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	25-45	25-45	10-15	5-10	---	10-20
Sandberg bluegrass	POSE	---	---	---	---	---	5-10
bottlebrush squirreltail	SIHY	---	---	5-10	5-10	---	2-8
desert needlegrass	STSP3	2-8	2-8	---	---	---	---
inland saltgrass	DISPS2	---	---	2-5	---	2-10	---
Bailey greasewood	SAVEB	20-30	20-30	0-5	---	---	15-30
Nevada ephedra	EPNE	---	---	---	5-10	---	---
black greasewood	SAVE4	---	---	20-30	---	60-70	---
bud sagebrush	ARSP5	2-8	2-8	2-5	---	---	2-8
burrobrush	HYMEN3	---	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---	---
seepweed	SUAED	---	---	---	---	2-8	---
shadscale	ATCO	5-15	5-15	20-35	---	2-10	15-30
spiny hopsage	GRSP	---	---	---	10-20	---	---
winterfat	EULA5	2-8	2-8	---	---	---	---

Range site number	027XY050NV	027XY050NV	027XY024NV	027XY022NV	027XY025NV	027XY018NV
Potential production (lb/acre):						
Favorable years	500	500	500	400	500	400
Normal years	350	350	350	200	350	250
Unfavorable years	200	200	150	50	200	100

## 425--TROCKEN-HESSING-DEFLER ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		TROCKEN	HESSING	DEFLER	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-30	15-30	40-50	---	---	15-25
Sandberg bluegrass	POSE	2-15	2-15	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-8	2-8	2-5	---	---	---
inland saltgrass	DISPS2	---	---	---	2-10	2-10	---
needleandthread	STCO4	---	---	5-15	---	---	---
globemallow	SPHAE	---	---	2-5	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
black greasewood	SAVE4	---	---	---	60-70	60-70	---
bud sagebrush	ARSP5	15-25	15-25	5-15	---	---	---
rabbitbrush	CHRY59	---	---	---	---	---	2-5
seepweed	SUAED	---	---	---	2-8	2-8	---
shadscale	ATCO	20-35	20-35	---	2-10	2-10	---
spiny hopsage	GRSP	---	---	---	---	---	10-20
winterfat	EULA5	5-10	5-10	25-30	---	---	---
Range site number							
		027XY013NV	027XY013NV	027XY014NV	027XY025NV	027XY025NV	027XY029NV
Potential production (lb/acre):							
Favorable years		600	600	700	500	500	800
Normal years		450	450	500	350	350	500
Unfavorable years		250	250	350	200	200	300

## 430--KRAM-ATTELLA-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		KRAM	ATTELLA	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	---	15 25-30 35	---	5-15	5-15	5-15
Sandberg bluegrass	POSE	---	---	---	2-8	---	2-8
Thurber needlegrass	STTH2	X	5 5-10 10	---	30-40	---	25-35
desert needlegrass	STSP3	---	---	---	---	40-60	---
globemallow	SPHAE	---	2 2-4 4	---	---	1-3	---
Anderson wolfberry	LYAN	---	---	---	---	2-5	---
Douglas rabbitbrush	CHVI8	---	2 2-5 5	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	2-5	2-5
Wyoming big sagebrush	ARTRW	---	25 25-25 35	---	---	---	25-35
black sagebrush	ARAEN	X	---	---	25-35	---	---
shadscale	ATCO	---	2 2-5 5	---	---	20-35	---
spiny hopsage	GRSP	---	2 2-5 5	---	---	2-8	2-8
singleleaf pinyon	PIMO	X	---	---	---	---	--

Range site number	024XY051NV	024XY045NV	none	027XY032NV	027XY017NV	027XY007NV
Potential production (lb/acre):						
Favorable years	500	350		500	400	700
Normal years	300	200		300	200	500
Unfavorable years	250	100		200	100	300

## 432--KRAM-FINDOUT-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		KRAM	FINDOUT	ROCK OUTCROP	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	---	5-15	---	5-15	5-15
Sandberg bluegrass	POSE	---	---	---	2-8	2-8
Thurber needlegrass	STTH2	X	---	---	30-40	25-35
desert needlegrass	STSP3	---	40-60	---	---	---
globemallow	SPHAE	---	1-3	---	---	---
Anderson wolfberry	LYAN	---	2-5	---	---	---
Nevada ephedra	EPNE	---	2-5	---	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	25-35
black sagebrush	ARAEN	X	---	---	25-35	---
shadscale	ATCO	---	20-35	---	---	---
spiny hopsage	GRSP	---	2-8	---	---	2-8
singleleaf pinyon	PIMO	X	---	---	---	---

Range site number	024XY051NV	027XY017NV	none	027XY032NV	027XY007NV
Potential production (lb/acre):					
Favorable years	500	400		500	700
Normal years	300	200		300	500
Unfavorable years	250	100		200	300

## 433--KRAM-HOPEKA-ROCK OUTCROP ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		KRAM	HOPEKA	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	---	X	---	5-15	---	---
Sandberg bluegrass	POSE	---	---	---	2-8	---	---
Thurber needlegrass	STTH2	X	X	---	30-40	X	---
basin wildrye	ELCI2	---	X	---	---	---	60-80
bluebunch wheatgrass	AGSP	X	X	---	---	X	---
bluegrass	POA++	---	X	---	---	---	---
bottlebrush squirreltail	SIEY	---	X	---	---	---	---
creeping wildrye	ELTR3	---	---	---	---	---	5-15
western wheatgrass	AGSM	---	---	---	---	---	5-15
arrowleaf balsamroot	BASA3	---	X	---	---	---	---
tapertip hawksbeard	CRAC2	---	X	---	---	---	---
Stansbury cliffrose	COMES	---	X	---	---	---	---
antelope bitterbrush	PUTR2	---	X	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	5-15
black sagebrush	APARN	X	X	---	25-35	X	---
curlleaf mountainmahogany	CELE3	---	X	---	---	---	---
Utah juniper	JUOS	---	X	---	---	---	---
singleleaf pinyon	PIMO	X	X	---	---	X	---

Range site number	024XY051NV	028BY060NV	none	027XY032NV	024XY051NV	027XY003NV
Potential production (lb/acre):						
Favorable years	500	500		500	500	3500
Normal years	300	300		300	300	2000
Unfavorable years	250	250		200	250	1000

## 440--RAVENSWOOD-ITCA-WALTI ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		RAVENSWOOD	ITCA	WALTI	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---
Idaho fescue	FEID	X	X	20-40	---	15-25	---
Nevada bluegrass	PONE3	X	X	---	---	---	---
Sandberg bluegrass	POSE	---	---	---	---	---	---
Thurber needlegrass	STTH2	---	---	2-8	---	---	15-25
Webber ricegrass	STWE	---	---	---	---	2-5	5-10
arrowleaf balsamroot	BASA3	X	X	---	---	---	---
basin wildrye	ELCI2	X	X	---	---	---	---
bluebunch wheatgrass	AGSP	X	X	10-20	---	2-5	15-20
bluegrass	POA++	---	---	2-8	---	5-10	2-8
bottlebrush squirreltail	SIHY	X	X	---	---	---	---
pine bluegrass	POSC	---	---	---	---	---	---
balsamroot	BALSA	---	---	---	---	---	2-5
goldenweed	HAPLO2	---	---	---	---	2-5	---
tapertip hawksbeard	CRAC2	X	X	---	---	---	---
Utah serviceberry	AMUT	X	X	---	---	---	---
antelope bitterbrush	PUTR2	X	X	---	---	---	---
black sagebrush	ARARN	---	---	---	---	---	---
curlleaf mountainmahogany	CELE3	X	X	---	---	---	---
low sagebrush	ARAR8	---	---	20-30	---	---	25-35
mountain big sagebrush	ARVA2	X	X	---	---	---	---
sagebrush	ARTEM	---	---	---	---	25-40	---
snowberry	SYMPH	X	X	---	---	---	---
singleleaf pinyon	PIMO	X	X	---	---	---	---
Range site number		025XY061NV	025XY061NV	024XY027NV	none	024XY016NV	024XY018NV
Potential production (lb/acre):							
Favorable years		500	500	1200		350	700
Normal years		375	375	800		250	500
Unfavorable years		250	250	600		150	300



## 450--WHOLAN-DEFLER ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		WHOLAN	WHOLAN	DEFLER	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	15-25	20-35	5-10	10-20	---	15-25
Sandberg bluegrass	POSE	---	---	---	5-10	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	5-10	2-5	2-8	2-8	---	---
inland saltgrass	DISPS2	---	---	---	---	2-10	---
other perennial grasses	PPGG	2-5	---	---	---	---	---
globemallow	SPHAE	2-5	---	---	---	---	---
Bailey greasewood	SAVEE	---	---	---	15-30	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
black greasewood	SAVE4	---	---	---	---	60-70	---
bud sagebrush	ARSP5	2-8	5-10	---	2-8	---	---
fourwing saltbush	ATCA2	2-5	---	---	---	---	---
rabbitbrush	CHRY9	---	---	---	---	---	2-5
saltbush	ATRIIP	---	40-50	---	---	---	---
seepweed	SUAED	---	---	---	---	2-8	---
shadscale	ATCO	---	---	---	15-30	2-10	---
spiny hopsage	GRSP	---	---	---	---	---	10-20
winterfat	EULA5	40-50	5-10	60-70	---	---	---
Range site number		028BY013NV	027XY078NV	028BY018NV	027XY018NV	027XY025NV	027XY029NV
Potential production (lb/acre):							
Favorable years		700	600	500	400	500	800
Normal years		500	400	350	250	350	500
Unfavorable years		350	250	200	100	200	300

## 460--JUVA-WHOLAN-STUMBLE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		JUVA	WHOLAN	STUMBLE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	10-20	15-25	50-70	10-20	5-10	---
Sandberg bluegrass	POSE	5-10	---	---	5-10	---	---
alkali sacaton	SPAI	---	---	---	---	---	2-10
basin wildrye	ELCI2	---	---	---	---	---	30-45
bottlebrush squirreltail	SIHY	2-8	5-10	---	2-8	5-10	---
needleandthread	STCO4	---	---	5-15	---	---	---
other perennial grasses	PPGG	---	2-5	---	---	---	---
globemallow	SPHAE	---	2-5	---	---	---	---
Bailey greasewood	SAVEB	15-30	---	---	15-30	---	---
Nevada dalea	PSPO	---	---	0-5	---	---	---
Nevada ephedra	EPNE	---	---	---	---	5-10	---
Torrey quailbush	ATTO	---	---	---	---	---	30-50
black greasewood	SAVE4	---	---	---	---	---	2-10
bud sagebrush	ARSP5	2-8	2-8	---	2-8	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	2-5	10-20	---	5-10	2-5
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	15-30	---	---	15-30	---	---
spiny hopsage	GRSP	---	---	2-5	---	10-20	---
winterfat	EULA5	---	40-50	2-8	---	---	---

Range site number	027XY018NV	028BY013NV	027XY009NV	027XY018NV	027XY022NV	027XY041NV
Potential production (lb/acre):						
Favorable years	400	700	700	400	400	1500
Normal years	250	500	450	250	200	1000
Unfavorable years	100	350	250	100	50	600

## 470--HESSING-WHOLAN-DUN GLEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		HESSING	WHOLAN	DUN GLEN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-30	15-25	15-30	40-50	10-15	20-25
Sandberg bluegrass	POSE	2-15	---	2-15	---	---	2-5
basin wildrye	ELCI2	---	---	---	2-5	---	---
bottlebrush squirreltail	SIHY	2-8	5-10	2-8	---	5-10	2-5
inland saltgrass	DISPS2	---	---	---	---	2-5	---
needleandthread	STCO4	---	---	---	10-20	---	5-15
other perennial grasses	PPGG	---	2-5	---	---	---	---
globemallow	SPHAE	---	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	---	0-5	---
Nevada ephedra	EPNE	---	---	---	---	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	---	20-30
black greasewood	SAVE4	---	---	---	10-15	20-30	---
bud sagebrush	AKSP5	15-25	2-8	15-25	---	2-5	---
fourwing saltbush	ATCA2	---	2-5	---	2-5	---	---
shadscale	ATCO	20-35	---	20-35	---	20-35	---
spiny hopsage	GRSP	---	---	---	2-5	---	10-25
winterfat	EULA5	5-10	40-50	5-10	5-10	---	2-5
Range site number		027XY013NV	028BY013NV	027XY013NV	027XY012NV	027XY024NV	027XY008NV
Potential production (lb/acre):							
Favorable years		600	700	600	600	500	700
Normal years		450	500	450	400	350	500
Unfavorable years		250	350	250	200	150	300

## 471--HESSING-DUN GLEN-BANGO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		HESSING	DUN GLEN	BANGO	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	15-30	15-30	10-20	---	---	---
Sandberg bluegrass	POSE	2-15	2-15	5-10	---	---	---
alkali sacaton	SPAI	---	---	---	---	---	2-10
basin wildrye	ELCI2	---	---	---	---	---	30-45
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	---	---	---
inland saltgrass	DISPS2	---	---	---	2-10	2-10	---
Bailey greasewood	SAVEB	---	---	15-30	---	---	---
Torrey quailbush	ATTO	---	---	---	---	---	30-50
black greasewood	SAVE4	---	---	---	60-70	60-70	2-10
bud sagebrush	ARSP5	15-25	15-25	2-8	---	---	---
fourwing saltbush	ATCA2	---	---	---	---	---	2-5
seepweed	SUAED	---	---	---	2-8	2-8	---
shadscale	ATCO	20-35	20-35	15-30	2-10	2-10	---
winterfat	EULA5	5-10	5-10	---	---	---	---

Range site number	027XY013NV	027XY013NV	027XY018NV	027XY025NV	027XY025NV	027XY041NV
Potential production (lb/acre):						
Favorable years	600	600	400	500	500	1500
Normal years	450	450	250	350	350	1000
Unfavorable years	250	250	100	200	200	600

## 480--YODY-BUFFARAN-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		YODY	BUFFARAN	PINEVAL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	20-25	20-25	20-25	20-25	15-25	10-20
Sandberg bluegrass	POSE	2-5	2-5	2-5	2-5	---	5-10
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-5	2-5	2-5	2-5	---	2-8
needleandthread	STCO4	5-15	5-15	5-15	5-15	---	---
Bailey greasewood	SAVEB	---	---	---	---	---	15-30
Nevada ephedra	EPNE	2-5	2-5	2-5	2-5	---	---
Wyoming big sagebrush	ARTRW	20-30	20-30	20-30	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
bud sagebrush	ARSP5	---	---	---	---	---	2-8
rabbitbrush	CHRY59	---	---	---	---	2-5	---
shadscale	ATCO	---	---	---	---	---	15-30
spiny hopsage	GRSP	10-25	10-25	10-25	10-25	10-20	---
winterfat	EULA5	2-5	2-5	2-5	2-5	---	---
Range site number		027XY008NV	027XY008NV	027XY008NV	027XY008NV	027XY029NV	027XY018NV
Potential production (lb/acre):							
Favorable years		700	700	700	700	800	400
Normal years		500	500	500	500	500	250
Unfavorable years		300	300	300	300	300	100

## 481--YODY-RICERT-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		YODY	RICERT	PINEVAL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	20-25	15-30	20-25	15-25	40-50	20-25
Sandberg bluegrass	POSE	2-5	2-15	2-5	---	---	2-5
basin wildrye	ELCI2	---	---	---	5-15	---	---
bottlebrush squirreltail	SIHY	2-5	2-8	2-5	---	2-5	2-5
needleandthread	STCO4	5-15	---	5-15	---	5-15	5-15
globemallow	SPHAE	---	---	---	---	2-5	---
Nevada ephedra	EPNE	2-5	---	2-5	---	---	2-5
Wyoming big sagebrush	ARTRW	20-30	---	20-30	---	---	20-30
basin big sagebrush	ARTRT	---	---	---	20-30	---	---
bud sagebrush	ARSP5	---	15-25	---	---	5-15	---
rabbitbrush	CHRY59	---	---	---	2-5	---	---
shadscale	ATCO	---	20-35	---	---	---	---
spiny hopsage	GRSP	10-25	---	10-25	10-20	---	10-25
winterfat	EULA5	2-5	5-10	2-5	---	25-30	2-5

Range site number	027XY008NV	027XY013NV	027XY008NV	027XY029NV	027XY014NV	027XY008NV
Potential production (lb/acre):						
Favorable years	700	600	700	800	700	700
Normal years	500	450	500	500	500	500
Unfavorable years	300	250	300	300	350	300

## 484--YODY-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		YODY	PINEVAL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	20-25	20-25	20-25	10-20	15-25
Sandberg bluegrass	POSE	2-5	2-5	2-5	5-10	---
basin wildrye	ELCI2	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-5	2-5	2-5	2-8	---
needleandthread	STCO4	5-15	5-15	5-15	---	---
Bailey greasewood	SAVEB	---	---	---	15-30	---
Nevada ephedra	EPNE	2-5	2-5	2-5	---	---
Wyoming big sagebrush	ARTRW	20-30	20-30	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30
bud sagebrush	ARSP5	---	---	---	2-8	---
rabbitbrush	CHRY59	---	---	---	---	2-5
shadscale	ATCO	---	---	---	15-30	---
spiny hopsage	GRSP	10-25	10-25	10-25	---	10-20
winterfat	EULAS	2-5	2-5	2-5	---	---
Range site number		027XY008NV	027XY008NV	027XY008NV	027XY018NV	027XY029NV
Potential production (lb/acre):						
Favorable years		700	700	700	400	800
Normal years		500	500	500	250	500
Unfavorable years		300	300	300	100	300

## 491--PINEVAL-REBEL-WHOLAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		PINEVAL	REBEL	WHOLAN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	20-25	20-25	15-30	15-25	5-15	5-15
Sandberg bluegrass	POSE	2-5	2-5	2-15	---	2-8	2-8
Thurber needlegrass	STTH2	---	---	---	---	30-40	25-35
basin wildrye	ELCI2	---	---	---	5-15	---	---
bottlebrush squirreltail	SIBY	2-5	2-5	2-8	---	---	---
needleandthread	STCO4	5-15	5-15	---	---	---	---
Nevada ephedra	EPNE	2-5	2-5	---	---	---	2-5
Wyoming big sagebrush	ARTRW	20-30	20-30	---	---	---	25-35
basin big sagebrush	ARTRT	---	---	---	20-30	---	---
black sagebrush	ARARN	---	---	---	---	25-35	---
bud sagebrush	ARSP5	---	---	15-25	---	---	---
rabbitbrush	CHRSY9	---	---	---	2-5	---	---
shadscale	ATCO	---	---	20-35	---	---	---
spiny hopsage	GRSP	10-25	10-25	---	10-20	---	2-8
winterfat	EULA5	2-5	2-5	5-10	---	---	---
Range site number		027XY008NV	027XY008NV	027XY013NV	027XY029NV	027XY032NV	027XY007NV
Potential production (lb/acre):							
Favorable years		700	700	600	800	500	700
Normal years		500	500	450	500	300	500
Unfavorable years		300	300	250	300	200	300



## 492--PINEVAL-REBEL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		PINEVAL	REBEL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	20-25	20-25	15-25	5-15	---
Sandberg bluegrass	POSE	2-5	2-5	2-5	2-8	---
Thurber needlegrass	STH2	---	---	---	25-35	---
bottlebrush squirreltail	SIEY	2-5	2-5	5-10	---	---
needleandthread	STCO4	5-15	5-15	---	---	---
Nevada ephedra	EPNE	2-5	2-5	---	2-5	---
Wyoming big sagebrush	ARTRW	20-30	20-30	---	25-35	---
black sagebrush	ARAEN	---	---	15-25	---	---
desert snowberry	SYLO	---	---	2-5	---	---
shadscale	ATCO	---	---	5-15	---	---
spiny hopsage	GRSP	10-25	10-25	---	2-8	---
winterfat	EULA5	2-5	2-5	---	---	---
Range site number		027XY008NV	027XY008NV	027XY048NV	027XY007NV	none
Potential production (lb/acre):						
Favorable years		700	700	200	700	
Normal years		500	500	100	500	
Unfavorable years		300	300	50	300	

## 494--PINEVAL-BUCKAROO-REBEL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		PINEVAL	BUCKAROO	REBEL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	20-25	10-20	20-25	15-25	20-25	10-20
Sandberg bluegrass	POSE	2-5	5-10	2-5	---	2-5	5-10
basin wildrye	ELCI2	---	---	---	5-15	---	---
bottlebrush squirreltail	SIHY	2-5	2-8	2-5	---	2-5	2-8
needleandthread	STCO4	5-15	---	5-15	---	5-15	---
Bailey greasewood	SAVEB	---	15-30	---	---	---	15-30
Nevada ephedra	EPNE	2-5	---	2-5	---	2-5	---
Wyoming big sagebrush	ARTRW	20-30	---	20-30	---	20-30	---
basin big sagebrush	ARTRT	---	---	---	20-30	---	---
bud sagebrush	ARSP5	---	2-8	---	---	---	2-8
rabbitbrush	CHRY59	---	---	---	2-5	---	---
shadscale	ATCO	---	15-30	---	---	---	15-30
spiny hopsage	GRSP	10-25	---	10-25	10-20	10-25	---
winterfat	EULA5	2-5	---	2-5	---	2-5	---

Range site number	027XY008NV	027XY018NV	027XY008NV	027XY029NV	027XY008NV	027XY018NV
Potential production (lb/acre):						
Favorable years	700	400	700	800	700	400
Normal years	500	250	500	500	500	250
Unfavorable years	300	100	300	300	300	100

## 500--LOUDERBACK-RUSTIGATE-ISOLDE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		LOUDERBACK	RUSTIGATE	ISOLDE	Inclusion 1	Inclusion 2	Inclusion 3
Baltic rush	JUBA	5-10	5-10	---	---	---	---
Indian ricegrass	ORHY	---	---	20-30	---	---	10-20
Sandberg bluegrass	POSE	---	---	---	---	---	5-10
alkali sacaton	SPAI	30-45	30-45	---	2-10	---	---
basin wildrye	ELCI2	2-5	2-5	---	30-45	---	---
bottlebrush squirreltail	SIHY	---	---	---	---	---	2-8
inland saltgrass	DISPS2	10-15	10-15	2-5	---	2-10	---
western wheatgrass	AGSM	2-5	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	---	---	15-30
Torrey quailbush	ATTO	---	---	---	30-50	---	---
black greasewood	SAVE4	---	---	30-50	2-10	60-70	---
bud sagebrush	ARSP5	---	---	---	---	---	2-8
fourwing saltbush	ATCA2	---	---	2-5	2-5	---	---
seepweed	SUAED	---	---	---	---	2-8	---
shadscale	ATCO	---	---	2-5	---	2-10	15-30

Range site number	027XY005NV	027XY005NV	027XY016NV	027XY041NV	027XY025NV	027XY018NV
Potential production (lb/acre):						
Favorable years	3000	3000	500	1500	500	400
Normal years	2200	2200	300	1000	350	250
Unfavorable years	1000	1000	150	600	200	100

## 511--GRUMBLIN-PICKUP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		GRUMBLIN	PICKUP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	---	---	5-15	15-25	15-25
Sandberg bluegrass	POSE	2-10	2-8	---	2-8	---	---
Thurber needlegrass	STTH2	---	---	---	25-35	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
desert needlegrass	STSP3	5-15	30-40	---	---	2-10	---
Bailey greasewood	SAVEB	10-20	---	---	---	---	---
Lahontan sagebrush	ARTEM	35-50	25-35	---	---	---	---
Nevada ephedra	EPNE	2-8	---	---	2-5	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	25-35	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
bud sagebrush	ARSP5	---	---	---	---	2-8	---
rabbitbrush	CHRY9	---	---	---	---	---	2-5
shadscale	ATCO	2-5	---	---	---	30-40	---
spiny hopsage	GRSP	2-5	2-8	---	2-8	---	10-20
winterfat	EULA5	---	---	---	---	2-8	---

Range site number	027XY070NV	027XY020NV	none	027XY007NV	027XY027NV	027XY029NV
Potential production (lb/acre):						
Favorable years	400	450		700	200	800
Normal years	250	300		500	100	500
Unfavorable years	100	150		300	50	300

## 520--PINEVAL-BLUEWING-INMO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		PINEVAL	BLUEWING	INMO	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	20-25	5-10	15-30	15-25	10-20
Sandberg bluegrass	POSE	2-5	---	2-15	---	5-10
basin wildrye	ELCI2	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-5	5-10	2-8	---	2-8
needleandthread	STCO4	5-15	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	---	15-30
Nevada ephedra	EPNE	2-5	5-10	---	---	---
Wyoming big sagebrush	ARTRW	20-30	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---
bud sagebrush	ARSP5	---	---	15-25	---	2-8
burrobrush	HYMEN3	---	5-10	---	---	---
fourwing saltbush	ATCA2	---	5-10	---	---	---
littleleaf horsebrush	TEGL	---	10-20	---	---	---
rabbitbrush	CHRY9	---	---	---	2-5	---
rubber rabbitbrush	CHNA2	---	10-20	---	---	---
shadscale	ATCO	---	---	20-35	---	15-30
spiny hopsage	GRSP	10-25	10-20	---	10-20	---
winterfat	EULA5	2-5	---	5-10	---	---
Range site number		027XY008NV	027XY022NV	027XY013NV	027XY029NV	027XY018NV
Potential production (lb/acre):						
Favorable years		700	400	600	800	400
Normal years		500	200	450	500	250
Unfavorable years		300	50	250	300	100

## 530--CLEAVER-TROCKEN-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		CLEAVER	TROCKEN	BLUEWING	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	25-45	5-10	10-20	10-20
Sandberg bluegrass	POSE	5-10	---	---	5-10	5-10
bottlebrush squirreltail	SIHY	2-8	---	5-10	2-8	2-8
desert needlegrass	STSP3	---	2-8	---	---	---
Bailey greasewood	SAVE8	15-30	20-30	---	15-30	15-30
Nevada ephedra	EPNE	---	---	5-10	---	---
bud sagebrush	ARSP5	2-8	2-8	---	2-8	2-8
burrobrush	HYMEN3	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	---	---
shadscale	ATCO	15-30	5-15	---	15-30	15-30
spiny hopsage	GRSP	---	---	10-20	---	---
winterfat	EULAS	---	2-8	---	---	---
Range site number		027XY018NV	027XY050NV	027XY022NV	027XY018NV	027XY018NV
Potential production (lb/acre):						
Favorable years		400	500	400	400	400
Normal years		250	350	200	250	250
Unfavorable years		100	200	50	100	100

## 532--CLEAVER-RICERT-BARNMOT ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		CLEAVER	RICERT	BARNMOT	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	10-20	10-20	15-25	15-25	10-20	5-10
Sandberg bluegrass	POSE	5-10	5-10	---	---	5-10	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	---	2-8	5-10
desert needlegrass	STSP3	---	---	2-10	2-10	---	---
Bailey greasewood	SAVEB	15-30	15-30	---	---	15-30	---
Nevada ephedra	EPNE	---	---	2-5	2-5	---	5-10
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8	2-8	---
burrobrush	HYMEN3	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-20
shadscale	ATCO	15-30	15-30	30-40	30-40	15-30	---
spiny hopsage	GRSP	---	---	---	---	---	10-20
winterfat	EULA5	---	---	2-8	2-8	---	---

Range site number	027XY018NV	027XY018NV	027XY027NV	027XY027NV	027XY018NV	027XY022NV
Potential production (lb/acre):						
Favorable years	400	400	200	200	400	400
Normal years	250	250	100	100	250	200
Unfavorable years	100	100	50	50	100	50

## 533--CLEAVER-BUFFARAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		CLEAVER	BUFFARAN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	20-25	10-20	10-20	20-25
Sandberg bluegrass	POSE	5-10	2-5	5-10	5-10	2-5
bottlebrush squirreltail	SIHY	2-8	2-5	2-8	2-8	2-5
needleandthread	STCO4	---	5-15	---	---	5-15
Bailey greasewood	SAVEB	15-30	---	15-30	15-30	---
Nevada ephedra	EPNE	---	2-5	---	---	2-5
Wyoming big sagebrush	ARTRW	---	20-30	---	---	20-30
bud sagebrush	ARSP5	2-8	---	2-8	2-8	---
shadscale	ATCO	15-30	---	15-30	15-30	---
spiny hopsage	GRSP	---	10-25	---	---	10-25
winterfat	EULA5	---	2-5	---	---	2-5
Range site number		027XY018NV	027XY008NV	027XY018NV	027XY018NV	027XY008NV
Potential production (lb/acre):						
Favorable years		400	700	400	400	700
Normal years		250	500	250	250	500
Unfavorable years		100	300	100	100	300



## 535--CLEAVER-BUNDORF ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		CLEAVER	BUNDORF	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	10-20	15-30	10-20
Sandberg bluegrass	POSE	5-10	5-10	2-15	5-10
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	2-8
Bailey greasewood	SAVEB	15-30	15-30	---	15-30
bud sagebrush	ARSP5	2-8	2-8	15-25	2-8
shadscale	ATCO	15-30	15-30	20-35	15-30
winterfat	EULA5	---	---	5-10	---
Range site number		027XY018NV	027XY018NV	027XY013NV	027XY018NV
Potential production (lb/acre):					
Favorable years		400	400	600	400
Normal years		250	250	450	250
Unfavorable years		100	100	250	100

## 536--CLEAVER-REDNIK ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		CLEAVER	REDNIK	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	10-20	15-30	5-10
Sandberg bluegrass	POSE	5-10	5-10	2-15	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	5-10
Bailey greasewood	SAVEB	15-30	15-30	---	---
Nevada ephedra	EFNE	---	---	---	5-10
bud sagebrush	ARSP5	2-8	2-8	15-25	---
burrobrush	HYMEN3	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	10-20
shadscale	ATCO	15-30	15-30	20-35	---
spiny hopsage	GRSP	---	---	---	10-20
winterfat	EULA5	---	---	5-10	---

Range site number	027XY018NV	027XY018NV	027XY013NV	027XY022NV
Potential production (lb/acre):				
Favorable years	400	400	600	400
Normal years	250	250	450	200
Unfavorable years	100	100	250	50

## 537--CLEAVER-OTOMO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		CLEAVER	OTOMO	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	10-20	15-30	10-20
Sandberg bluegrass	POSE	5-10	5-10	2-15	5-10
bottlebrush squirreltail	SIRY	2-8	2-8	2-8	2-8
Bailey greasewood	SAVEB	15-30	15-30	---	15-30
bud sagebrush	ARSP5	2-8	2-8	15-25	2-8
shadscale	ATCO	15-30	15-30	20-35	15-30
winterfat	EULAS	---	---	5-10	---
Range site number		027XY018NV	027XY018NV	027XY013NV	027XY018NV
Potential production (lb/acre):					
Favorable years		400	400	600	400
Normal years		250	250	450	250
Unfavorable years		100	100	250	100

## 538--CLEAVER-GENEGRAF-ROIC ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		CLEAVER	GENEGRAF	ROIC	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	OREY	10-20	10-20	15-25	25-45	50-70	---	---
Sandberg bluegrass	POSE	5-10	5-10	---	---	---	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	---	---	---	---
desert needlegrass	STSP3	---	---	2-10	2-8	---	---	---
needleandthread	STCO4	---	---	---	---	5-15	---	---
Bailey greasewood	SAVEB	15-30	15-30	---	20-30	---	---	---
Nevada dalea	PSPO	---	---	---	---	0-5	---	---
Nevada ephedra	EPNE	---	---	2-5	---	---	---	---
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8	---	---	---
fourwing saltbush	ATCA2	---	---	---	---	10-20	---	---
shadscale	ATCO	15-30	15-30	30-40	5-15	---	---	---
spiny hopsage	GRSP	---	---	---	---	2-5	---	---
winterfat	EULA5	---	---	2-8	2-8	2-8	---	---

Range site number	027XY018NV	027XY018NV	027XY027NV	027XY050NV	027XY009NV	none	none
Potential production (lb/acre):							
Favorable years	400	400	200	500	700		
Normal years	250	250	100	350	450		
Unfavorable years	100	100	50	200	250		

## 540--DOUHIDE-ITCA-RAVENSWOOD ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		DOUHIDE	ITCA	RAVENSWOOD	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	X	X	X	---	---	---
Indian ricegrass	OREY	X	X	X	---	---	5-15
Sandberg bluegrass	POSE	X	X	X	---	---	2-8
Thurber needlegrass	STTH2	X	X	X	---	10-20	30-40
basin wildrye	ELCI2	X	X	X	---	---	---
bluebunch wheatgrass	AGSP	X	X	X	---	20-40	---
bluegrass	POA++	---	---	---	---	5-10	---
bottlebrush squirreltail	SIEY	X	X	X	---	---	---
muttongrass	POPE	---	---	---	---	---	---
pine needlegrass	STPI2	---	---	---	---	2-8	---
arrowleaf balsamroot	BASA3	X	X	X	---	---	---
goldenweed	HAPLO2	---	---	---	---	2-5	---
tapertip hawksbeard	CRAC2	X	X	X	---	---	---
antelope bitterbrush	PUTR2	X	X	X	---	---	---
black sagebrush	ARARN	---	---	---	---	---	25-35
ephedra	EPHED	X	X	X	---	---	---
low sagebrush	ARAR8	---	---	---	---	---	---
mountain big sagebrush	ARVA2	X	X	X	---	---	---
sagebrush	ARTEM	---	---	---	---	35-45	---
serviceberry	AMELA	X	X	X	---	---	---
Utah juniper	JUOS	X	X	X	---	---	---
singleleaf pinyon	PIMO	X	X	X	---	---	---

Range site number	028BY062NV	028BY062NV	028BY062NV	none	028BY034NV	027XY032NV
Potential production (lb/acre):						
Favorable years	700	700	700		350	500
Normal years	500	500	500		200	300
Unfavorable years	300	300	300		100	200

## 551--YERINGTON LOAMY FINE SAND, 2 TO 4 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		YERINGTON	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	50-70	20-30	5-10
bottlebrush squirreltail	SIHY	---	---	5-10
needleandthread	STCO4	5-15	5-15	---
Nevada dalea	PSPO	0-5	---	---
Nevada dalea	PAP0	---	2-8	---
Nevada ephedra	EPNE	---	---	5-10
burrobrush	HVMEN3	---	---	5-10
fourwing saltbush	ATCA2	10-20	15-25	5-10
hairy horsebrush	TECO2	---	25-35	---
littleleaf horsebrush	TEGL	---	2-5	10-20
rubber rabbitbrush	CHNA2	---	---	10-20
spiny hopsage	GRSP	2-5	---	10-20
winterfat	EULA5	2-8	---	---

Range site number	027XY009NV	027XY023NV	027XY022NV
Potential production (lb/acre):			
Favorable years	700	700	400
Normal years	450	500	200
Unfavorable years	250	300	50

## 560--IZOD-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		IZOD	ROCK OUTCROP	Inclusion 1
Indian ricegrass	OREY	5-15	---	2-5
Thurber needlegrass	STTH2	15-30	---	---
globemallow	SPHAE	2-5	---	---
Bailey greasewood	SAVES	---	---	5-15
Cooper wolfberry	LYCO2	---	---	1-5
Nevada dalea	PSPO	---	---	1-5
black sagebrush	ARARN	25-35	---	---
shadscale	ATCO	---	---	50-70
Range site number		024XY030NV	none	029XY033NV
Potential production (lb/acre):				
Favorable years		500		100
Normal years		350		50
Unfavorable years		250		25

## 572--RAWE-MALPAIS ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		RAWE	MALPAIS	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	10-20	50-70	25-45	5-10
Sandberg bluegrass	POSE	5-10	5-10	---	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	---	5-10
desert needlegrass	STSP3	---	---	---	2-8	---
needleandthread	STCO4	---	---	5-15	---	---
Bailey greasewood	SAVEB	15-30	15-30	---	20-30	---
Nevada dalea	PSPO	---	---	0-5	---	---
Nevada ephedra	EPNE	---	---	---	---	5-10
bud sagebrush	ARSP5	2-8	2-8	---	2-8	---
burrobrush	HYMEN3	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	10-20	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	10-20
shadscale	ATCO	15-30	15-30	---	5-15	---
spiny hopsage	GRSP	---	---	2-5	---	10-20
winterfat	EULA5	---	---	2-8	2-8	---

Range site number	027XY018NV	027XY018NV	027XY009NV	027XY050NV	027XY022NV
Potential production (lb/acre):					
Favorable years	400	400	700	500	400
Normal years	250	250	450	350	200
Unfavorable years	100	100	250	200	50



## 580--WELCH LOAM, 2 TO 8 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		WELCH	Inclusion 1	Inclusion 2
Nevada bluegrass	PONE3	15-25	---	---
basin wildrye	ELCI2	---	---	60-80
creeping wildrye	ELTR3	---	---	5-15
meadow barley	HOBR2	2-5	---	---
rush	JUNCU	10-15	---	---
sedge	CAREX	20-35	---	---
western wheatgrass	AGSM	---	---	5-15
basin big sagebrush	ARTRT	---	---	5-15
Range site number		027XY004NV	none	027XY003NV
Potential production (lb/acre):				
Favorable years		2500		3500
Normal years		1500		2000
Unfavorable years		1000		1000

## 590--REBEL-PINEVAL-YODY ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		REBEL	PINEVAL	YODY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	20-25	20-25	20-25	40-50	10-20	15-25
Sandberg bluegrass	POSE	2-5	2-5	2-5	---	5-10	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-5	2-5	2-5	2-5	2-8	---
needleandthread	STCO4	5-15	5-15	5-15	5-15	---	---
globemallow	SPHAE	---	---	---	2-5	---	---
Bailey greasewood	SAVEB	---	---	---	---	15-30	---
Nevada ephedra	EPNE	2-5	2-5	2-5	---	---	---
Wyoming big sagebrush	ARTRW	20-30	20-30	20-30	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
bud sagebrush	ARSP5	---	---	---	5-15	2-8	---
rabbitbrush	CHRY59	---	---	---	---	---	2-5
shadscale	ATCO	---	---	---	---	15-30	---
spiny hopsage	GRSP	10-25	10-25	10-25	---	---	10-20
winterfat	EULA5	2-5	2-5	2-5	25-30	---	---

Range site number	027XY008NV	027XY008NV	027XY008NV	027XY014NV	027XY018NV	027XY029NV
Potential production (lb/acre):						
Favorable years	700	700	700	700	400	800
Normal years	500	500	500	500	250	500
Unfavorable years	300	300	300	350	100	300

## 591--REBEL LOAM, 0 TO 2 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		REBEL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	20-25	---	---	---
Sandberg bluegrass	POSE	2-5	---	---	---
basin wildrye	ELCI2	---	60-80	60-80	---
bottlebrush squirreltail	SIHY	2-5	---	---	---
creeping wildrye	ELTR3	---	5-15	5-15	---
inland saltgrass	DISPS2	---	---	---	2-10
needleandthread	STCO4	5-15	---	---	---
western wheatgrass	AGSM	---	5-15	5-15	---
Nevada ephedra	EPNE	2-5	---	---	---
Wyoming big sagebrush	ARTRW	20-30	---	---	---
basin big sagebrush	ARTRT	---	5-15	5-15	---
black greasewood	SAVE4	---	---	---	60-70
seepweed	SUAED	---	---	---	2-8
shadscale	ATCO	---	---	---	2-10
spiny hopsage	GRSP	10-25	---	---	---
winterfat	EULA5	2-5	---	---	---
Range site number		027XY008NV	027XY003NV	027XY003NV	027XY025NV
Potential production (lb/acre):					
Favorable years		700	3500	3500	500
Normal years		500	2000	2000	350
Unfavorable years		300	1000	1000	200

## 592--REBEL-WHOLAN-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		REBEL	WHOLAN	PINEVAL	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	20-25	40-50	20-25	15-30	15-25
Sandberg bluegrass	POSE	2-5	---	2-5	2-15	---
basin wildrye	ELCI2	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-5	2-5	2-5	2-8	---
needleandthread	STCO4	5-15	5-15	5-15	---	---
globemallow	SPHAE	---	2-5	---	---	---
Nevada ephedra	EPNE	2-5	---	2-5	---	---
Wyoming big sagebrush	ARTRW	20-30	---	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30
bud sagebrush	ARSP5	---	5-15	---	15-25	---
rabbitbrush	CHRY59	---	---	---	---	2-5
shadscale	ATCO	---	---	---	20-35	---
spiny hopsage	GRSP	10-25	---	10-25	---	10-20
winterfat	EULA5	2-5	25-30	2-5	5-10	---
Range site number		027XY008NV	027XY014NV	027XY008NV	027XY013NV	027XY029NV
Potential production (lb/acre):						
Favorable years		700	700	700	600	800
Normal years		500	500	500	450	500
Unfavorable years		300	350	300	250	300

## 600--HOOTEN-BANGO-ISOLDE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		HOOTEN	BANGO	ISOLDE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	10-15	10-20	20-30	---	10-20	---
Sandberg bluegrass	POSE	---	5-10	---	---	5-10	---
bottlebrush squirreltail	SIHY	5-10	2-8	---	---	2-8	---
inland saltgrass	DISPS2	2-5	---	2-5	---	---	---
Bailey greasewood	SAVEB	0-5	15-30	---	---	15-30	---
black greasewood	SAVE4	20-30	---	30-50	---	---	---
bud sagebrush	ARSP5	2-5	2-8	---	---	2-8	---
fourwing saltbush	ATCA2	---	---	2-5	---	---	---
shadscale	ATCO	20-35	15-30	2-5	---	15-30	---
Range site number		027XY024NV	027XY018NV	027XY016NV	none	027XY018NV	none
Potential production (lb/acre):							
Favorable years		500	400	500		400	
Normal years		350	250	300		250	
Unfavorable years		150	100	150		100	

## 610--BARNMOT-BLUEWING-BADLAND ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BARNMOT	BLUEWING	BADLAND	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	25-45	---	10-20	5-10	---
Sandberg bluegrass	POSE	---	---	---	5-10	---	---
bottlebrush squirreltail	SIRY	---	---	---	2-8	5-10	---
desert needlegrass	STSP3	2-10	2-8	---	---	---	---
Bailey greasewood	SAVEB	---	20-30	---	15-30	---	---
Nevada ephedra	EPNE	2-5	---	---	---	5-10	---
bud sagebrush	ARSP5	2-8	2-8	---	2-8	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	30-40	5-15	---	15-30	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	---
winterfat	EULA5	2-8	2-8	---	---	---	---

Range site number	027XY027NV	027XY050NV	none	027XY018NV	027XY022NV	none
Potential production (lb/acre):						
Favorable years	200	500		400	400	
Normal years	100	350		250	200	
Unfavorable years	50	200		100	50	

## 620--FINDOUT-URIPNES-SINGATSE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		FINDOUT	URIPNES	SINGATSE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	OREY	5-15	5-15	15-25	5-15	---	20-25	5-10
Sandberg bluegrass	POSE	---	---	---	2-8	---	2-5	---
Thurber needlegrass	STTH2	---	---	---	30-40	---	---	---
bottlebrush squirreltail	SIHY	---	---	---	---	---	2-5	5-10
desert needlegrass	STSP3	40-60	40-60	2-10	---	---	---	---
needleandthread	STCO4	---	---	---	---	---	5-15	---
globemallow	SPHAE	1-3	1-3	---	---	---	---	---
Anderson wolfberry	LYAN	2-5	2-5	---	---	---	---	---
Nevada ephedra	EPNE	2-5	2-5	2-5	---	---	2-5	5-10
Wyoming big sagebrush	ARTRW	---	---	---	---	---	20-30	---
black sagebrush	ARARN	---	---	---	25-35	---	---	---
bud sagebrush	ARSP5	---	---	2-8	---	---	---	---
burrobrush	HYMEN3	---	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	---	---	10-20
shadscale	ATCO	20-35	20-35	30-40	---	---	---	---
spiny hopsage	GRSP	2-8	2-8	---	---	---	10-25	10-20
winterfat	EULA5	---	---	2-8	---	---	2-5	---
Range site number		027XY017NV	027XY017NV	027XY027NV	027XY032NV	none	027XY008NV	027XY022NV
Potential production (lb/acre):								
Favorable years		400	400	200	500		700	400
Normal years		200	200	100	300		500	200
Unfavorable years		100	100	50	200		300	50

## 621--FINDOUT-IZOD-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		FINDOUT	IZOD	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-15	---	5-15	5-10	---
Sandberg bluegrass	POSE	---	---	---	2-8	---	---
Thurber needlegrass	STTH2	---	15-30	---	25-35	---	X
bottlebrush squirreltail	SIHY	---	---	---	---	5-10	---
desert needlegrass	STSP3	40-60	---	---	---	15-25	---
globemallow	SPHAE	1-3	2-5	---	---	---	---
Anderson wolfberry	LYAN	2-5	---	---	---	---	---
Nevada ephedra	EPNE	2-5	---	---	2-5	5-10	---
Wyoming big sagebrush	ARTRW	---	---	---	25-35	20-35	---
black sagebrush	ARARN	---	25-35	---	---	---	X
purple sage	SADOC2	---	---	---	---	5-10	---
shadscale	ATCO	20-35	---	---	---	---	---
spiny hopsage	GRSP	2-8	---	---	2-8	---	---
singleleaf pinyon	FIMO	---	---	---	---	---	X

Range site number	027XY017NV	024XY030NV	none	027XY007NV	027XY051NV	024XY051NV
Potential production (lb/acre):						
Favorable years	400	500		700	500	500
Normal years	200	350		500	350	300
Unfavorable years	100	250		300	200	250



## 622--FINDOUT-OLD CAMP-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		FINDOUT	OLD CAMP	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-15	---	5-10	15-30	5-15
Sandberg bluegrass	POSE	---	2-8	---	---	2-15	2-8
Thurber needlegrass	STH2	---	25-35	---	---	---	30-40
bottlebrush squirreltail	SIHY	---	---	---	5-10	2-8	---
desert needlegrass	STSP3	40-60	---	---	15-25	---	---
globemallow	SPHAE	1-3	---	---	---	---	---
Anderson wolfberry	LYAN	2-5	---	---	---	---	---
Nevada ephedra	EPNE	2-5	2-5	---	5-10	---	---
Wyoming big sagebrush	ARTRW	---	25-35	---	20-35	---	---
black sagebrush	ARARN	---	---	---	---	---	25-35
bud sagebrush	ARSP5	---	---	---	---	15-25	---
purple sage	SADOC2	---	---	---	5-10	---	---
shadscale	ATCO	20-35	---	---	---	20-35	---
spiny hopsage	GRSP	2-8	2-8	---	---	---	---
winterfat	EULA5	---	---	---	---	5-10	---
Range site number		027XY017NV	027XY007NV	none	027XY051NV	027XY013NV	027XY032NV
Potential production (lb/acre):							
Favorable years		400	700		500	600	500
Normal years		200	500		350	450	300
Unfavorable years		100	300		200	250	200

## 640--MAZUMA-BANGO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		MAZUMA	BANGO	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	---	10-20	---	---	10-20	20-30
Sandberg bluegrass	POSE	---	5-10	---	---	5-10	---
bottlebrush squirreltail	SIHY	---	2-8	---	---	2-8	---
inland saltgrass	DISPS2	2-10	---	2-10	2-10	---	2-5
Bailey greasewood	SAVEB	---	15-30	---	---	15-30	---
black greasewood	SAVE4	60-70	---	60-70	60-70	---	30-50
bud sagebrush	ARSP5	---	2-8	---	---	2-8	---
fourwing saltbush	ATCA2	---	---	---	---	---	2-5
seepweed	SUAED	2-8	---	2-8	2-8	---	---
shadscale	ATCO	2-10	15-30	2-10	2-10	15-30	2-5
Range site number		027XY025NV	027XY018NV	027XY025NV	027XY025NV	027XY018NV	027XY016NV
Potential production (lb/acre):							
Favorable years		500	400	500	500	400	500
Normal years		350	250	350	350	250	300
Unfavorable years		200	100	200	200	100	150

## 643--MAZUMA-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		MAZUMA	BLUEWING	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	---	25-45	10-20	5-10
Sandberg bluegrass	POSE	---	---	5-10	---
bottlebrush squirreltail	SIHY	---	---	2-8	5-10
desert needlegrass	STSP3	---	2-8	---	---
inland saltgrass	DISPS2	2-10	---	---	---
Bailey greasewood	SAVE2	---	20-30	15-30	---
Nevada ephedra	EPNE	---	---	---	5-10
black greasewood	SAVE4	60-70	---	---	---
bud sagebrush	ARSP5	---	2-8	2-8	---
burrobrush	HYMEN3	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	10-20
rubber rabbitbrush	CRNA2	---	---	---	10-20
seepweed	SUAED	2-8	---	---	---
shadscale	ATCO	2-10	5-15	15-30	---
spiny hopsage	GRSP	---	---	---	10-20
winterfat	EULA5	---	2-8	---	---
Range site number		027XY025NV	027XY050NV	027XY018NV	027XY022NV
Potential production (lb/acre):					
Favorable years		500	500	400	400
Normal years		350	350	250	200
Unfavorable years		200	200	100	50

## 644--MAZUMA-TOULON-CHUCKLES ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		MAZUMA	TOULON	CHUCKLES	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-15	10-20	10-15	25-45	5-10	10-20
Sandberg bluegrass	POSE	---	5-10	---	---	---	5-10
bottlebrush squirreltail	SIHY	5-10	2-8	5-10	---	5-10	2-8
desert needlegrass	STSP3	---	---	---	2-8	---	---
inland saltgrass	DISPS2	2-5	---	2-5	---	---	---
Bailey greasewood	SAVEB	0-5	15-30	0-5	20-30	---	15-30
Nevada ephedra	EPNE	---	---	---	---	5-10	---
black greasewood	SAVE4	20-30	---	20-30	---	---	---
bud sagebrush	ARSP5	2-5	2-8	2-5	2-8	---	2-8
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	20-35	15-30	20-35	5-15	---	15-30
spiny hopsage	GRSP	---	---	---	---	10-20	---
winterfat	EULA5	---	---	---	2-8	---	---

Range site number	027XY024NV	027XY018NV	027XY024NV	027XY050NV	027XY022NV	027XY018NV
Potential production (lb/acre):						
Favorable years	500	400	500	500	400	400
Normal years	350	250	350	350	200	250
Unfavorable years	150	100	150	200	50	100

## 645--MAZUMA VERY FINE SANDY LOAM, 0 TO 4 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		MAZUMA	Inclusion 1	Inclusion 2	Inclusion 3
Baltic rush	JUBA	---	---	---	5-10
Indian ricegrass	ORRY	15-30	10-15	5-10	---
Sandberg bluegrass	POSE	2-15	---	---	---
alkali sacaton	SPAI	---	---	---	30-45
basin wildrye	ELCI2	---	---	---	2-5
bottlebrush squirreltail	SIHY	2-8	5-10	5-10	---
inland saltgrass	DISPS2	---	2-5	---	10-15
western wheatgrass	AGSM	---	---	---	2-5
Bailey greasewood	SAVEB	---	0-5	---	---
Nevada ephedra	EPNE	---	---	5-10	---
black greasewood	SAVE4	---	20-30	---	---
bud sagebrush	ARSP5	15-25	2-5	---	---
burrobrush	HYMEN3	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	10-20	---
shadscale	ATCO	20-35	20-35	---	---
spiny hopsage	GRSP	---	---	10-20	---
winterfat	EULA5	5-10	---	---	---

Range site number	027XY013NV	027XY024NV	027XY022NV	027XY005NV
Potential production (lb/acre):				
Favorable years	600	500	400	3000
Normal years	450	350	200	2200
Unfavorable years	250	150	50	1000

## 650--LABOU-ROCK OUTCROP COMPLEX

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		LABOU	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	---	10-20	10-20	50-70
Sandberg bluegrass	POSE	5-10	---	5-10	5-10	---
bottlebrush squirreltail	SIHY	2-8	---	2-8	2-8	---
needleandthread	STCO4	---	---	---	---	5-15
Bailey greasewood	SAVEB	15-30	---	15-30	15-30	---
Nevada dalea	PSP0	---	---	---	---	0-5
bud sagebrush	ARSP5	2-8	---	2-8	2-8	---
fourwing saltbush	ATCA2	---	---	---	---	10-20
shadscale	ATCO	15-30	---	15-30	15-30	---
spiny hopsage	GRSP	---	---	---	---	2-5
winterfat	EULA5	---	---	---	---	2-8
Range site number		027XY018NV	none	027XY018NV	027XY018NV	027XY009NV
Potential production (lb/acre):						
Favorable years		400		400	400	700
Normal years		250		250	250	450
Unfavorable years		100		100	100	250

## 660--LOOMER-DUCO ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		LOOMER	DUCO	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	X	---	---	---
Indian ricegrass	ORRY	---	X	5-15	5-15	---
Sandberg bluegrass	POSE	2-8	X	2-8	2-8	---
Thurber needlegrass	STTH2	20-35	X	25-35	30-40	---
bottlebrush squirreltail	SIRY	---	X	---	---	---
desert needlegrass	STSP1	2-5	---	---	---	---
arrowleaf balsamroot	BASA2	---	X	---	---	---
tapertip hawksbeard	CRAC2	---	X	---	---	---
Lahontan sagebrush	ARTEM	30-35	---	---	---	---
Nevada ephedra	EPNE	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	X	25-35	---	---
black sagebrush	ARARN	---	---	---	25-35	---
ephedra	EPHED	---	X	---	---	---
spiny hopsage	GRSP	2-5	---	2-8	---	---
Utah juniper	JUOS	---	X	---	---	---
singleleaf pinyon	PIMO	---	X	---	---	---
Range site number		027XY079NV	027XY081NV	027XY007NV	027XY032NV	none
Potential production (lb/acre):						
Favorable years		500	500	700	500	
Normal years		350	300	500	300	
Unfavorable years		200	200	300	200	

## 662--LOOMER-BOMBADIL-OLD CAMP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		LOOMER	BOMBADIL	OLD CAMP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	---	5-10	5-15	10-20	---	20-25
Sandberg bluegrass	POSE	2-8	---	2-8	5-10	---	2-5
Thurber needlegrass	STTH2	20-35	---	25-35	---	X	---
bottlebrush squirreltail	SIHY	---	5-10	---	2-8	---	2-5
desert needlegrass	STSP3	2-5	15-25	---	---	---	---
needleandthread	STCO4	---	---	---	---	---	5-15
Bailey greasewood	SAVEB	---	---	---	15-30	---	---
Lahontan sagebrush	ARTEM	30-35	---	---	---	---	---
Nevada ephedra	EPNE	---	5-10	2-5	---	---	2-5
Wyoming big sagebrush	ARTRW	---	20-35	25-35	---	---	20-30
bud sagebrush	ARSP5	---	---	---	2-8	---	---
purple sage	SADOC2	---	5-10	---	---	---	---
shadscale	ATCO	---	---	---	15-30	---	---
spiny hopsage	GRSP	2-5	---	2-8	---	---	10-25
winterfat	EULA5	---	---	---	---	---	2-5
black sagebrush	ARARN	---	---	---	---	X	---
bluebunch wheatgrass	AGSP	---	---	---	---	X	---
singleleaf pinyon	PIMO	---	---	---	---	X	---
Range site number		027XY079NV	027XY051NV	027XY007NV	027XY018NV	024XY051NV	027XY008NV
Potential production (lb/acre):							
Favorable years		500	500	700	400	500	700
Normal years		350	350	500	250	300	500
Unfavorable years		200	200	300	100	250	300



## 670--CELETON-GENEGRAF-BEDWYR ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		CELETON	GENEGRAF	BEDWYR	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	OREY	15-25	10-20	15-25	---	25-45	15-25	5-10
Sandberg bluegrass	POSE	---	5-10	---	---	---	---	---
bottlebrush squirreltail	SINY	---	2-8	---	---	---	---	5-10
desert needlegrass	STSP3	2-10	---	2-10	---	2-8	2-10	---
Bailey greasewood	SAVEB	---	15-30	---	---	20-30	---	---
Nevada ephedra	EPNE	2-5	---	2-5	---	---	2-5	5-10
bud sagebrush	ARSP5	2-8	2-8	2-8	---	2-8	2-8	---
burrobrush	HYMEN3	---	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	---	---	10-20
shadscale	ATCO	30-40	15-30	30-40	---	5-15	30-40	---
spiny hopsage	GRSP	---	---	---	---	---	---	10-20
winterfat	EULA5	2-8	---	2-8	---	2-8	2-8	---
Range site number		027XY027NV	027XY018NV	027XY027NV	none	027XY050NV	027XY027NV	027XY022NV
Potential production (lb/acre):								
Favorable years		200	400	200		500	200	400
Normal years		100	250	100		350	100	200
Unfavorable years		50	100	50		200	50	50

## 671--CELETON-BEDWYR-WATOOPAH ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		CELETON	BEDWYR	WATOOPAH	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	15-25	10-20	15-30	15-25	20-30	15-25	40-50
Sandberg bluegrass	POSE	---	5-10	---	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15	---
bottlebrush squirreltail	SIEY	---	2-8	---	---	---	---	2-5
desert needlegrass	STSP3	2-10	---	---	2-10	---	---	---
needleandthread	STCO4	---	---	5-10	---	5-10	---	5-15
thickspike wheatgrass	AGDA	---	---	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---	---	---
wheatgrass	AGROP	---	---	5-15	---	---	---	---
globemallow	SPHAE	---	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	---	15-30	---	---	---	---	---
Nevada ephedra	EFNE	2-5	---	---	2-5	10-20	---	---
basin big sagebrush	ARTRT	---	---	15-25	---	2-8	20-30	---
bud sagebrush	ARSP5	2-8	2-8	---	2-8	---	---	5-15
fourwing saltbush	ATCA2	---	---	2-8	---	20-30	---	---
rabbitbrush	CHRY59	---	---	---	---	---	2-5	---
shadscale	ATCO	30-40	15-30	---	30-40	---	---	---
spiny hopsage	GRSP	---	---	5-10	---	---	10-20	---
winterfat	EULA5	2-8	---	---	2-8	---	---	25-30

Range site number	027XY027NV	027XY018NV	027XY045NV	027XY027NV	027XY053NV	027XY029NV	027XY014NV
Potential production (lb/acre):							
Favorable years	200	400	800	200	600	800	700
Normal years	100	250	600	100	500	500	500
Unfavorable years	50	100	400	50	300	300	350

## 672--CELETON-BARNMOT-CHILPER ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		CELETON	BARNMOT	CHILPER	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	15-25	15-30	25-45	---	10-20
Sandberg bluegrass	POSE	---	---	2-15	---	---	5-10
bottlebrush squirreltail	SIHY	---	---	2-8	---	---	2-8
desert needlegrass	STSP3	2-10	2-10	---	2-8	---	---
Bailey greasewood	SAVEB	---	---	---	20-30	---	15-30
Nevada ephedra	EPNE	2-5	2-5	---	---	---	---
bud sagebrush	ARSP5	2-8	2-8	15-25	2-8	---	2-8
shadscale	ATCO	30-40	30-40	20-35	5-15	---	15-30
winterfat	EULA5	2-8	2-8	5-10	2-8	---	---
Range site number		027XY027NV	027XY027NV	027XY013NV	027XY050NV	none	027XY018NV
Potential production (lb/acre):							
Favorable years		200	200	600	500		400
Normal years		100	100	450	350		250
Unfavorable years		50	50	250	200		100

## 680--BOMBADIL-OLD CAMP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BOMBADIL	OLD CAMP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-10	5-15	---	15-25	---
Sandberg bluegrass	POSE	---	2-8	---	---	2-8
Thurber needlegrass	STTH2	---	25-35	---	---	20-35
basin wildrye	ELCI2	---	---	---	5-15	---
bottlebrush squirreltail	SINHY	5-10	---	---	---	---
desert needlegrass	STSP3	15-25	---	---	---	2-5
Lahontan sagebrush	ARTEM	---	---	---	---	30-35
Nevada ephedra	EPNE	5-10	2-5	---	---	---
Wyoming big sagebrush	ARTRW	20-35	25-35	---	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---
purple sage	SADOC2	5-10	---	---	---	---
rabbitbrush	CHRYSS9	---	---	---	2-5	---
spiny hopsage	GRSP	---	2-8	---	10-20	2-5
Range site number		027XY051NV	027XY007NV	none	027XY029NV	027XY079NV
Potential production (lb/acre):						
Favorable years		500	700		800	500
Normal years		350	500		500	350
Unfavorable years		200	300		300	200

## 691--OSOBB-SINGATSE-PIROUETTE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		OSOBB	SINGATSE	PIROUETTE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-25	15-25	10-20	15-25	5-15	5-15	---
Sandberg bluegrass	POSE	---	---	5-10	---	---	2-8	---
Thurber needlegrass	STTH2	---	---	---	---	---	25-35	---
bottlebrush squirreltail	SIHY	---	---	2-8	---	2-5	---	---
desert needlegrass	STSP3	2-10	2-10	---	2-10	2-8	---	---
Bailey greasewood	SAVEB	---	---	15-30	---	15-30	---	---
Nevada ephedra	EPNE	2-5	2-5	---	2-5	---	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	25-35	---
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8	2-8	---	---
shadscale	ATCO	30-40	30-40	15-30	30-40	15-35	---	---
spiny hopsage	GRSP	---	---	---	---	---	2-8	---
winterfat	EULA5	2-8	2-8	---	2-8	---	---	---
Range site number		027XY027NV	027XY027NV	027XY018NV	027XY027NV	027XY019NV	027XY007NV	none
Potential production (lb/acre):								
Favorable years		200	200	400	200	300	700	
Normal years		100	100	250	100	175	500	
Unfavorable years		50	50	100	50	50	300	

## 700--CLANALPINE-ITCA-OLD CAMP ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable.  
Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		CLANALPINE	ITCA	OLD CAMP	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	X	X	---	---	---	X
Cusick bluegrass	POCU3	X	X	---	---	---	---
Idaho fescue	FEID	X	X	---	---	---	X
Indian ricegrass	ORHY	---	---	5-15	5-15	---	X
Sandberg bluegrass	POSE	X	X	2-8	2-8	---	X
Thurber needlegrass	STTH2	---	---	25-35	30-40	5-15	X
basin wildrye	ELCI2	---	---	---	---	2-5	---
bluebunch wheatgrass	AGSP	---	---	---	---	40-60	---
bluegrass	POA++	---	---	---	---	2-8	---
bottlebrush squirreltail	SIHY	---	---	---	---	---	X
arrowleaf balsamroot	BASA3	X	X	---	---	2-5	---
arrowleaf balsamroot	BASA2	---	---	---	---	---	X
lupine	LUPIN	X	X	---	---	---	---
phlox	PELOX	X	X	---	---	---	---
tapertip hawksbeard	CRAC2	X	X	---	---	2-5	X
Nevada ephedra	EFNE	---	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	---	25-35	---	---	---
antelope bitterbrush	PUTR2	---	---	---	---	---	X
big sagebrush	ARTR2	---	---	---	---	15-25	---
black sagebrush	ARARN	---	---	---	25-35	---	---
currant	RIBES	X	X	---	---	---	---
ephedra	EPHED	---	---	---	---	---	X
mountain big sagebrush	ARVA2	X	X	---	---	---	X
oceanspray	HOLOD	X	X	---	---	---	---
serviceberry	AMELA	---	---	---	---	---	X
spiny hopsage	GRSP	---	---	2-8	---	---	---
Utah juniper	JUOS	X	X	---	---	---	X
singleleaf pinyon	PIMO	X	X	---	---	---	X

Range site number	027XY080NV	027XY080NV	027XY007NV	027XY032NV	024XY028NV	027XY082NV
Potential production (lb/acre):						
Favorable years	350	350	700	500	1000	700
Normal years	150	150	500	300	700	500
Unfavorable years	100	100	300	200	500	300

## 710--LUNING-IZO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		LUNING	IZO	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	45-60	5-10	15-25	15-25
basin wildrye	ELCY2	---	---	---	5-15
bottlebrush squirreltail	SIHY	---	---	2-5	---
galleta	HIJA	---	---	2-10	---
sand dropseed	SPCR	2-5	---	---	---
globemallow	SPHAE	1-3	---	---	---
Bailey greasewood	SAVEE	---	2-10	0-10	---
Cooper wolfberry	LYCO2	5-15	2-5	---	---
Nevada ephedra	EPNE	---	2-5	1-5	---
basin big sagebrush	ARTRT	---	---	---	20-30
bud sagebrush	ARSP5	---	---	5-15	---
burrobrush	HYMEN3	---	5-10	---	---
fourwing saltbush	ATCA2	20-30	5-15	---	---
littleleaf horsebrush	TEGL	---	5-10	---	---
rabbitbrush	CHRY9	---	---	---	2-5
rubber rabbitbrush	CHNA2	---	10-25	---	---
shadscale	ATCO	---	---	25-35	---
spiny hopsage	GRSP	---	---	---	10-20
winterfat	EULA5	2-8	---	5-10	---
Range site number					
		027XY060NV	029XY041NV	029XY017NV	027XY029NV
Potential production (lb/acre):					
Favorable years		450	500	500	800
Normal years		250	300	350	500
Unfavorable years		100	100	150	300

## 730--HOOPHITE-THEON-OLD CAMP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		HOOPHITE	THEON	OLD CAMP	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	5-15	5-15	5-15	15-25	---
Sandberg bluegrass	POSE	2-8	---	2-8	---	---
Thurber needlegrass	STTH2	30-40	---	25-35	---	---
bottlebrush squirreltail	SIHY	---	2-5	---	---	---
desert needlegrass	STSP3	---	2-8	---	2-10	---
Bailey greasewood	SAVEB	---	15-30	---	---	---
Nevada ephedra	EPNE	---	---	2-5	2-5	---
Wyoming big sagebrush	ARTRW	---	---	25-35	---	---
black sagebrush	ARARN	25-35	---	---	---	---
bud sagebrush	ARSP5	---	2-8	---	2-8	---
shadscale	ATCO	---	15-35	---	30-40	---
spiny hopsage	GRSP	---	---	2-8	---	---
winterfat	KULA5	---	---	---	2-8	---

Range site number	027XY032NV	027XY019NV	027XY007NV	027XY027NV	none
Potential production (lb/acre):					
Favorable years	500	300	700	200	
Normal years	300	175	500	100	
Unfavorable years	200	50	300	50	



## 731--HOOPLITE-OLD CAMP-SINGATSE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		HOOPLITE	OLD CAMP	SINGATSE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-15	15-25	---	15-25	20-25
Sandberg bluegrass	POSE	2-8	2-8	---	---	---	2-5
Thurber needlegrass	STTH2	30-40	25-35	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIEY	---	---	---	---	---	2-5
desert needlegrass	STSP3	---	---	2-10	---	---	---
needleandthread	STCO4	---	---	---	---	---	5-15
Nevada ephedra	EPNE	---	2-5	2-5	---	---	2-5
Wyoming big sagebrush	ARTRW	---	25-35	---	---	---	20-30
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
black sagebrush	ARARN	25-35	---	---	---	---	---
bud sagebrush	ARSP5	---	---	2-8	---	---	---
rabbitbrush	CHRY9	---	---	---	---	2-5	---
shadscale	ATCO	---	---	30-40	---	---	---
spiny hopsage	GRSP	---	2-8	---	---	10-20	10-25
winterfat	EULA5	---	---	2-8	---	---	2-5
Range site number		027XY032NV	027XY007NV	027XY027NV	none	027XY029NV	027XY008NV
Potential production (lb/acre):							
Favorable years		500	700	200		800	700
Normal years		300	500	100		500	500
Unfavorable years		200	300	50		300	300

## 732--HOOPHITE-OLD CAMP-PUETT ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		HOOPHITE	OLD CAMP	PUETT	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	5-15	5-15	10-20	20-25	10-20
Sandberg bluegrass	POSE	2-8	2-8	2-5	2-5	2-5
Thurber needlegrass	STTH2	30-40	25-35	---	---	---
bottlebrush squirreltail	SIHY	---	---	2-5	2-5	2-5
needleandthread	STCO4	---	---	10-20	5-15	10-20
Nevada ephedra	EPNE	---	2-5	---	2-5	---
Wyoming big sagebrush	ARTRW	---	25-35	---	20-30	---
black sagebrush	ARARN	25-35	---	35-45	---	35-45
shadscale	ATCO	---	---	2-5	---	2-5
spiny hopsage	GRSP	---	2-8	---	10-25	---
winterfat	EULA5	---	---	---	2-5	---

Range site number	027XY032NV	027XY007NV	028BY016NV	027XY008NV	028BY016NV
Potential production (lb/acre):					
Favorable years	500	700	350	700	350
Normal years	300	500	225	500	225
Unfavorable years	200	300	100	300	100

## 733--HOOPHITE-OLD CAMP-JUNG ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		HOOPHITE	OLD CAMP	JUNG	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-15	5-15	25-35	5-15	10-20
Sandberg bluegrass	POSE	2-8	2-8	2-8	---	---	2-5
Thurber needlegrass	STH2	30-40	25-35	30-40	---	---	---
bottlebrush squirreltail	SIHY	---	---	---	---	2-5	2-5
desert needlegrass	STSP3	---	---	---	2-5	2-8	---
galleta	HIJA	---	---	---	2-15	---	---
needleandthread	STCO4	---	---	---	---	---	10-20
globemallow	SPHAE	---	---	---	1-3	---	---
Bailey greasewood	SAVEB	---	---	---	25-35	15-30	---
Nevada ephedra	EPNE	---	2-5	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	25-35	---	---	---	---
black sagebrush	ARARN	25-35	---	25-35	---	---	35-45
bud sagebrush	ARSP5	---	---	---	---	2-8	---
shadscale	ATCO	---	---	---	15-25	15-35	2-5
spiny hopsage	GRSP	---	2-8	---	---	---	---
Range site number		027XY032NV	027XY007NV	027XY032NV	027XY015NV	027XY019NV	028BY016NV
Potential production (lb/acre):							
Favorable years		500	700	500	500	300	350
Normal years		300	500	300	350	175	225
Unfavorable years		200	300	200	200	50	100

## 734--HOOPHITE-THEON-PUETT ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		HOOPHITE	THEON	PUETT	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-15	10-20	5-15	15-25	15-25
Sandberg bluegrass	POSE	2-8	---	2-5	2-8	---	---
Thurber needlegrass	STTH2	30-40	---	---	25-35	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SINY	---	2-5	2-5	---	---	---
desert needlegrass	STSP3	---	2-8	---	---	---	2-10
needleandthread	STCO4	---	---	10-20	---	---	---
Bailey greasewood	SAVEB	---	15-30	---	---	---	---
Nevada ephedra	EPNE	---	---	---	2-5	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	25-35	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
black sagebrush	ARARN	25-35	---	35-45	---	---	---
bud sagebrush	ARSP5	---	2-8	---	---	---	2-8
rabbitbrush	CHRY59	---	---	---	---	2-5	---
shadscale	ATCO	---	15-35	2-5	---	---	30-40
spiny hopsage	GRSP	---	---	---	2-8	10-20	---
winterfat	EULAS	---	---	---	---	---	2-8
Range site number		027XY032NV	027XY019NV	028BY016NV	027XY007NV	027XY029NV	027XY027NV
Potential production (lb/acre):							
Favorable years		500	300	350	700	800	200
Normal years		300	175	225	500	500	100
Unfavorable years		200	50	100	300	300	50

## 735--HOOPHITE-OLD CAMP-DUCO ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		HOOPHITE	OLD CAMP	DUCO	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	X	---	---	---
Indian ricegrass	ORHY	5-15	5-15	X	---	---	---
Sandberg bluegrass	POSE	2-8	2-8	X	2-8	---	---
Thurber needlegrass	STH2	30-40	25-35	X	20-35	5-15	---
basin wildrye	ELCI2	---	---	---	---	2-5	---
bluebunch wheatgrass	AGSP	---	---	---	---	40-60	---
bluegrass	POA++	---	---	---	---	2-8	---
bottlebrush squirreltail	SIHY	---	---	X	---	---	---
desert needlegrass	STSP3	---	---	---	2-5	---	---
arrowleaf balsamroot	BASA3	---	---	---	---	2-5	---
arrowleaf balsamroot	BASA2	---	---	X	---	---	---
tapertip hawksbeard	CRAC2	---	---	X	---	2-5	---
Lahontan sagebrush	ARTEM	---	---	---	30-35	---	---
Nevada ephedra	EPNE	---	2-5	---	---	---	---
Wyoming big sagebrush	ARTRW	---	25-35	X	---	---	---
big sagebrush	ARTR2	---	---	---	---	15-25	---
black sagebrush	ARARN	25-35	---	---	---	---	---
ephedra	EPHED	---	---	X	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
spiny hopsage	GRSP	---	2-8	---	2-5	---	---
Utah juniper	JUOS	---	---	X	---	---	---
singleleaf pinyon	PIMO	---	---	X	---	---	---

Range site number	027XY032NV	027XY007NV	027XY081NV	027XY079NV	024XY028NV	none
Potential production (lb/acre):						
Favorable years	500	700	500	500	1000	
Normal years	300	500	300	350	700	
Unfavorable years	200	300	200	200	500	

## 740--PACKER-LAYVIEW-HAPGOOD ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable.  
Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		PACKER	LAYVIEW	HAPGOOD	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Cusick bluegrass	POCU3	---	---	5-15	5-15	---	---	---
Idaho fescue	FEID	15-25	15-25	50-60	50-60	X	---	---
Nevada bluegrass	PONE3	---	---	---	---	X	---	15-25
Sandberg bluegrass	POSE	---	---	---	---	---	---	---
Webber ricegrass	STWE	2-5	2-5	---	---	---	---	---
big squirreltail	SIJU	---	---	---	---	X	---	---
bluebunch wheatgrass	AGSP	2-5	2-5	5-15	5-15	X	---	---
bluegrass	POA++	5-10	5-10	---	---	---	---	---
meadow barley	HOBR2	---	---	---	---	---	---	2-5
mountain brome	BRCA5	---	---	---	---	X	---	---
pine bluegrass	POSC	---	---	---	---	---	---	---
rush	JUNCU	---	---	---	---	---	---	10-15
sedge	CAREX	---	---	---	---	---	---	20-35
slender wheatgrass	AGTR	---	---	---	---	X	---	---
goldenweed	HAPLO2	2-5	2-5	---	---	---	---	---
groundsel	SENEC	---	---	---	---	X	---	---
meadowrue	THALI2	---	---	---	---	X	---	---
melic	MELIC	---	---	---	---	X	---	---
black sagebrush	ARARN	---	---	---	---	---	---	---
low sagebrush	ARARS	---	---	---	---	---	---	---
mountain big sagebrush	ARVA2	---	---	5-15	5-15	X	---	---
sagebrush	ARTEM	25-40	25-40	---	---	---	---	---
snowberry	SYMPE	---	---	2-5	2-5	X	---	---
quaking aspen	POTRT	---	---	---	---	X	---	---

Range site number	024XY016NV	024XY016NV	024XY023NV	024XY023NV	028BY067NV	none	027XY004NV
Potential production (lb/acre):							
Favorable years	350	350	1500	1500	800		2500
Normal years	250	250	1200	1200	600		1500
Unfavorable years	150	150	900	900	400		1000

## 741--PACKER-HAPGOOD-ROCK OUTCROP ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		PACKER	HAPGOOD	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Columbia needlegrass	STNE3	---	5-10	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---	---
Idaho fescue	FEID	15-25	5-10	---	15-25	---	X	---
Indian ricegrass	ORHY	---	---	---	---	2-5	---	---
Nevada bluegrass	PONE3	---	2-5	---	---	---	X	15-25
Sandberg bluegrass	POSE	---	---	---	---	---	---	---
Webber ricegrass	STWE	2-5	---	---	2-5	---	---	---
big squirreltail	SIJU	---	---	---	---	---	X	---
bluebunch wheatgrass	AGSP	2-5	5-10	---	2-5	10-20	X	---
bluegrass	POA++	5-10	---	---	5-10	---	---	---
meadow barley	HOBR2	---	---	---	---	---	---	2-5
mountain brome	BRCA5	---	15-30	---	---	---	X	---
muttongrass	POFE	---	---	---	---	2-8	---	---
needleandthread	STCO4	---	---	---	---	---	---	---
needlegrass	STIPA	---	---	---	---	5-10	---	---
pine bluegrass	POSC	---	---	---	---	---	---	---
rush	JUNCU	---	---	---	---	---	---	10-15
sedge	CAREX	---	---	---	---	---	---	20-35
slender wheatgrass	AGTR	---	5-10	---	---	---	X	---
goldenweed	HAPLO2	2-5	---	---	2-5	---	---	---
groundsel	SENEC	---	---	---	---	---	X	---
meadowrue	THALI2	---	---	---	---	---	X	---
melic	MELIC	---	---	---	---	---	X	---
black sagebrush	ARARN	---	---	---	---	---	---	---
low sagebrush	ARARS	---	---	---	---	---	---	---
mountain big sagebrush	ARVA2	---	10-20	---	---	15-25	X	---
sagebrush	ARTEM	25-40	---	---	25-40	---	---	---
serviceberry	AMELA	---	2-10	---	---	---	---	---
snowberry	SYMPE	---	2-5	---	---	2-8	X	---
curlleaf mountainmahogany	CELE3	---	---	---	---	30-50	---	---
quaking aspen	POTRT	---	---	---	---	---	X	---

Range site number                      024XY016NV    024XY032NV    none    024XY016NV    028BY032NV    028BY067NV    027XY004NV

Potential production (lb/acre):

Favorable years	350	2200	350	1300	800	2500
Normal years	250	1700	250	900	600	1500
Unfavorable years	150	1200	150	600	400	1000

## 760--BURNBOROUGH-CLEAVAGE-WELCH ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable.  
Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BURNBOROUGH	CLEAVAGE	WELCH	Inclusion 1	Inclusion 2	Inclusion 3
Columbia needlegrass	STNE3	---	---	---	---	X	5-10
Cusick bluegrass	POCU3	---	---	---	---	---	---
Idaho fescue	FEID	20-40	15-25	---	---	---	5-10
Nevada bluegrass	PONE3	---	---	15-25	---	X	2-5
Sandberg bluegrass	POSE	---	---	---	---	---	---
Thurber needlegrass	STTH2	2-8	---	---	---	---	---
Webber ricegrass	STWE	---	2-5	---	---	---	---
basin wildrye	ELCI2	2-15	---	---	60-80	X	---
bentgrass	AGROS2	---	---	---	---	X	---
bluebunch wheatgrass	AGSP	20-40	2-5	---	---	---	5-10
bluegrass	POA++	---	5-10	---	---	---	---
creeping wildrye	ELTR3	---	---	---	5-15	X	---
meadow barley	HOB2	---	---	2-5	---	---	---
mountain brome	BRCA5	---	---	---	---	X	15-30
pine bluegrass	POSC	---	---	---	---	---	---
rush	JUNCU	---	---	10-15	---	X	---
sedge	CAREX	---	---	20-35	---	X	---
slender wheatgrass	AGTR	---	---	---	---	X	5-10
western wheatgrass	AGSM	---	---	---	5-15	---	---
arrowleaf balsamroot	BASA3	1-5	---	---	---	---	---
goldenweed	HAPLO2	---	2-5	---	---	---	---
groundsel	SENEC	---	---	---	---	X	---
helianthella	HELIA	1-2	---	---	---	---	---
meadowrue	THALI2	---	---	---	---	X	---
tapertip hawksbeard	CRAC2	1-5	---	---	---	---	---
white stone seed	LIRU4	1-2	---	---	---	---	---
yarrow	ACHEL	---	---	---	---	X	---
Woods rose	ROWO	---	---	---	---	X	---
basin big sagebrush	ARTRT	---	---	---	5-15	---	---
black sagebrush	ARARN	---	---	---	---	---	---
currant	RIBES	---	---	---	---	X	---
low sagebrush	ARARS	---	---	---	---	---	---
mountain big sagebrush	ARVA2	15-25	---	---	---	---	10-20
sagebrush	ARTEM	---	25-40	---	---	---	---
serviceberry	AMELA	---	---	---	---	---	2-10
snowberry	SYMPH	---	---	---	---	---	2-5
quaking aspen	POTRT	---	---	---	---	X	---

Range site number	024XY021NV	024XY016NV	027XY004NV	027XY003NV	028BY025NV	024XY032NV
Potential production (lb/acre):						
Favorable years	1400	350	2500	3500	1600	2200
Normal years	1000	250	1500	2000	1300	1700
Unfavorable years	700	150	1000	1000	1000	1200



## 761--BURNBOROUGH-CLEAVAGE-RELUCTAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BURNBOROUGH	CLEAVAGE	RELUCTAN	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---
Idaho fescue	FEID	20-40	15-25	20-40	---	---	---
Sandberg bluegrass	POSE	---	---	---	---	---	---
Thurber needlegrass	STTH2	2-8	---	2-8	5-15	X	---
Webber ricegrass	STWE	---	2-5	---	---	---	---
basin wildrye	ELCI2	2-15	---	2-15	2-5	---	---
bluebunch wheatgrass	AGSP	20-40	2-5	20-40	40-60	X	---
bluegrass	POA++	---	5-10	---	2-8	---	---
pine bluegrass	POSC	---	---	---	---	---	---
arrowleaf balsamroot	BASA3	1-5	---	1-5	2-5	---	---
goldenweed	HAPLO2	---	2-5	---	---	---	---
helianthella	HELIA	1-2	---	1-2	---	---	---
tapertip hawksbeard	CRAC2	1-5	---	1-5	2-5	---	---
white stoneseed	LIRU4	1-2	---	1-2	---	---	---
Wyoming big sagebrush	ARTW	---	---	---	---	---	---
big sagebrush	ARTR2	---	---	---	15-25	---	---
black sagebrush	ARARN	---	---	---	---	X	---
low sagebrush	ARARS	---	---	---	---	---	---
mountain big sagebrush	ARVA2	15-25	---	15-25	---	---	---
sagebrush	ARTEM	---	25-40	---	---	---	---

Range site number	024XY021NV	024XY016NV	024XY021NV	024XY028NV	024XY051NV	none
Potential production (lb/acre):						
Favorable years	1400	350	1400	1000	500	
Normal years	1000	250	1000	700	300	
Unfavorable years	700	150	700	500	250	

## 770--CHILPER-BUNDORF-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		CHILPER	BUNDORF	TROCKEN	Inclusion 1	Inclusion 2
Indian ricegrass	ORNY	15-30	10-20	15-30	15-25	---
Sandberg bluegrass	POSE	2-15	5-10	2-15	---	---
basin wildrye	ELCI2	---	---	---	5-15	60-80
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	---	---
creeping wildrye	ELTR3	---	---	---	---	5-15
western wheatgrass	AGSM	---	---	---	---	5-15
Bailey greasewood	SAVEB	---	15-30	---	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	5-15
bud sagebrush	ARSP5	15-25	2-8	15-25	---	---
rabbitbrush	CHRY59	---	---	---	2-5	---
shadscale	ATCO	20-35	15-30	20-35	---	---
spiny hopsage	GRSP	---	---	---	10-20	---
winterfat	EULA5	5-10	---	5-10	---	---

Range site number	027XY013NV	027XY018NV	027XY013NV	027XY029NV	027XY003NV
Potential production (lb/acre):					
Favorable years	600	400	600	800	3500
Normal years	450	250	450	500	2000
Unfavorable years	250	100	250	300	1000

## 772--CHILPER-TROCKEN-JERVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		CHILPER	TROCKEN	JERVAL	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	15-30	15-30	15-30	5-10	15-25
Sandberg bluegrass	POSE	2-15	2-15	2-15	---	---
basin wildrye	ELCI2	---	---	---	---	5-15
bottlebrush squirreltail	SIBY	2-8	2-8	2-8	5-10	---
Nevada ephedra	EPNE	---	---	---	5-10	---
basin big sagebrush	ARTRT	---	---	---	---	20-30
bud sagebrush	ARSP5	15-25	15-25	15-25	---	---
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rabbitbrush	CHKYS9	---	---	---	---	2-5
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
shadscale	ATCO	20-35	20-35	20-35	---	---
spiny hopsage	GRSP	---	---	---	10-20	10-20
winterfat	EULA5	5-10	5-10	5-10	---	---
<hr/>						
Range site number		027XY013NV	027XY013NV	027XY013NV	027XY022NV	027XY029NV
Potential production (lb/acre):						
Favorable years		600	600	600	400	800
Normal years		450	450	450	200	500
Unfavorable years		250	250	250	50	300

## 790--JACRATZ-NAYFAN ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		JACRATZ	NAYFAN	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	X	X	---	X	X	---
Cusick bluegrass	POCU3	---	X	---	---	---	---
Idaho fescue	FEID	---	X	20-40	---	---	---
Indian ricegrass	ORHY	X	---	---	X	X	---
Sandberg bluegrass	POSE	X	X	---	X	X	---
Thurber needlegrass	STTH2	X	---	2-8	X	X	---
basin wildrye	ELCT2	---	---	2-15	---	---	---
bluebunch wheatgrass	AGSP	---	---	20-40	---	---	---
bottlebrush squirreltail	SIHY	X	---	---	X	X	---
arrowleaf balsamroot	BASA3	---	X	1-5	---	---	---
arrowleaf balsamroot	BASA2	X	---	---	X	X	---
helianthella	HELIA	---	---	1-2	---	---	---
lupine	LUPIN	---	X	---	---	---	---
phlox	PHLOX	---	X	---	---	---	---
tapertip hawksbeard	CRAC2	X	X	1-5	X	X	---
white stoneseed	LIRU4	---	---	1-2	---	---	---
Wyoming big sagebrush	ARTRW	X	---	---	X	X	---
current	RIBES	---	X	---	---	---	---
ephedra	EPHED	X	---	---	X	X	---
mountain big sagebrush	ARVA2	---	X	15-25	---	---	---
oceanspray	HOLOD	---	X	---	---	---	---
Utah juniper	JUOS	X	X	---	X	X	---
singleleaf pinyon	PIMO	X	X	---	X	X	---

Range site number	027XY081NV	027XY080NV	024XY021NV	027XY081NV	027XY081NV	none
Potential production (lb/acre):						
Favorable years	500	350	1400	500	500	
Normal years	300	150	1000	300	300	
Unfavorable years	200	100	700	200	200	

## 800--BEDWYR-CELETON ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		BEDWYR	CELETON	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	10-20	15-25	10-20	10-20
Sandberg bluegrass	POSE	5-10	---	5-10	5-10
bottlebrush squirreltail	SIEY	2-8	---	2-8	2-8
desert needlegrass	STSP3	---	2-10	---	---
Bailey greasewood	SAVEB	15-30	---	15-30	15-30
Nevada ephedra	EPNE	---	2-5	---	---
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8
shadscale	ATCO	15-30	30-40	15-30	15-30
winterfat	EULA5	---	2-8	---	---
Range site number		027XY018NV	027XY027NV	027XY018NV	027XY018NV
Potential production (lb/acre):					
Favorable years		400	200	400	400
Normal years		250	100	250	250
Unfavorable years		100	50	100	100

## 802--BEDWYR-BEDZEE-JOBPEAK ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BEDWYR	BEDZEE	JOBPEAK	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	X	---	---	---
Idaho fescue	FEID	---	---	X	---	---	---
Indian ricegrass	OREY	15-30	---	X	---	---	---
Sandberg bluegrass	POSE	2-15	2-8	X	2-8	---	---
Thurber needlegrass	STTE2	---	20-35	X	20-35	---	---
basin wildrye	ELCI2	---	---	---	---	---	60-80
bottlebrush squirreltail	SINY	2-8	---	X	---	---	---
creeping wildrye	ELTR3	---	---	---	---	---	5-15
desert needlegrass	STSP3	---	2-5	---	2-5	---	---
western wheatgrass	AGSM	---	---	---	---	---	5-15
arrowleaf balsamroot	BASA2	---	---	X	---	---	---
tapertip hawksbeard	CRAC2	---	---	X	---	---	---
Lahontan sagebrush	ARTEM	---	30-35	---	30-35	---	---
antelope bitterbrush	PUTR2	---	---	X	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	5-15
bud sagebrush	ARSP5	15-25	---	---	---	---	---
ephedra	EPHED	---	---	X	---	---	---
mountain big sagebrush	ARKVA2	---	---	X	---	---	---
serviceberry	AMELA	---	---	X	---	---	---
shadscale	ATCO	20-35	---	---	---	---	---
spiny hopsage	GRSP	---	2-5	---	2-5	---	---
winterfat	EULA5	5-10	---	---	---	---	---
Utah juniper	JUOS	---	---	X	---	---	---
singleleaf pinyon	PIMO	---	---	X	---	---	---

Range site number	027XY013NV	027XY079NV	027XY082NV	027XY079NV	none	027XY003NV
Potential production (lb/acre):						
Favorable years	600	500	700	500		3500
Normal years	450	350	500	350		2000
Unfavorable years	250	200	300	200		1000

## 820--ABOTEN-INMO-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ABOTEN	INMO	BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	10-20	25-35	5-10	5-10	10-20	25-35
Sandberg bluegrass	POSE	5-10	---	---	---	5-10	---
bottlebrush squirreltail	SIHY	2-8	---	5-10	5-10	2-8	---
galleta	HIJA	---	10-15	---	---	---	10-15
Anderson wolfberry	LYAN	---	2-5	---	---	---	2-5
Bailey greasewood	SAVEB	15-30	---	---	---	15-30	---
Nevada ephedra	EPNE	---	10-15	5-10	5-10	---	10-15
bud sagebrush	ARSP5	2-8	2-5	---	---	2-8	2-5
burrobrush	HYMEN3	---	---	5-10	5-10	---	---
fourwing saltbush	ATCA2	---	2-8	5-10	5-10	---	2-8
littleleaf horsebrush	TEGL	---	---	10-20	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	10-20	---	---
shadscale	ATCO	15-30	---	---	---	15-30	---
spiny hopsage	GRSP	---	15-30	10-20	10-20	---	15-30
winterfat	EULA5	---	2-5	---	---	---	2-5
Range site number		027XY018NV	029XY016NV	027XY022NV	027XY022NV	027XY018NV	029XY016NV
Potential production (lb/acre):							
Favorable years		400	1000	400	400	400	1000
Normal years		250	700	200	200	250	700
Unfavorable years		100	500	50	50	100	500

## 810--CORRAL-CELETON-BEDWYR ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		CORRAL	CELETON	BEDWYR	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-15	15-25	10-20	10-20	---	20-30	---
Sandberg bluegrass	POSE	2-8	---	5-10	2-5	2-8	---	---
Thurber needlegrass	STTH2	25-35	---	---	---	20-35	---	---
bottlebrush squirreltail	SINY	---	---	2-8	2-5	---	---	---
desert needlegrass	STSP3	---	2-10	---	---	2-5	---	---
needleandthread	STCO4	---	---	---	10-20	---	5-10	---
Bailey greasewood	SAVEB	---	---	15-30	---	---	---	---
Lahontan sagebrush	ARTEM	---	---	---	---	30-35	---	---
Nevada ephedra	EPNE	2-5	2-5	---	---	---	10-20	---
Wyoming big sagebrush	ARTRW	25-35	---	---	---	---	---	---
basin big sagebrush	ARTET	---	---	---	---	---	2-8	---
black sagebrush	ARARN	---	---	---	35-45	---	---	---
bud sagebrush	ARSP5	---	2-8	2-8	---	---	---	---
fourwing saltbush	ATCA2	---	---	---	---	---	20-30	---
shadscale	ATCO	---	30-40	15-30	2-5	---	---	---
spiny hopsage	GRSP	2-8	---	---	---	2-5	---	---
winterfat	EULAS	---	2-8	---	---	---	---	---
Range site number		027XY007NV	027XY027NV	027XY018NV	028BY016NV	027XY079NV	027XY053NV	none
Potential production (lb/acre):								
Favorable years		700	200	400	350	500	600	
Normal years		500	100	250	225	350	500	
Unfavorable years		300	50	100	100	200	300	



## 840--BELATE-ROCA-CLEAVAGE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		BELATE	ROCA	CLEAVAGE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	---	---	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---	---
Idaho fescue	FEID	25-35	---	15-25	15-25	---	20-40	---
Sandberg bluegrass	POSE	---	---	---	---	---	---	---
Thurber needlegrass	STTH2	---	5-15	---	---	---	2-8	---
Webber ricegrass	STWE	---	---	2-5	2-5	---	---	---
basin wildrye	ELCI2	---	2-5	---	---	---	2-15	60-80
bluebunch wheatgrass	AGSP	---	40-60	2-5	2-5	---	20-40	---
bluegrass	POA++	5-15	2-8	5-10	5-10	---	---	---
creeping wildrye	ELTR3	---	---	---	---	---	---	5-15
muttongrass	POFE	---	---	---	---	---	---	---
needlegrass	STIPA	5-10	---	---	---	---	---	---
pine bluegrass	POSC	---	---	---	---	---	---	---
western needlegrass	STOC2	---	---	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---	---	5-15
arrowleaf balsamroot	BASA3	---	2-5	---	---	---	1-5	---
goldenweed	HAPLO2	---	---	2-5	2-5	---	---	---
helianthella	HELIA	---	---	---	---	---	1-2	---
tapertip hawkbeard	CRAC2	---	2-5	---	---	---	1-5	---
white stoneseed	LIRU4	---	---	---	---	---	1-2	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	---	5-15
big sagebrush	ARTR2	---	15-25	---	---	---	---	---
black sagebrush	ARARN	---	---	---	---	---	---	---
low sagebrush	ARAR8	20-30	---	---	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	15-25	---
sagebrush	ARTEM	---	---	25-40	25-40	---	---	---
Range site number								
		027XY046NV	024XY028NV	024XY016NV	024XY016NV	none	024XY021NV	027XY003NV
Potential production (lb/acre):								
Favorable years		600	1000	350	350		1400	3500
Normal years		400	700	250	250		1000	2000
Unfavorable years		250	500	150	150		700	1000

## 850--WALTI-ROCA-BELATE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		WALTI	ROCA	BELATE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	---	---	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---	---
Idaho fescue	FEID	25-35	---	25-35	---	20-40	---	---
Indian ricegrass	ORHY	---	---	---	---	---	---	5-15
Sandberg bluegrass	POSE	---	---	---	---	---	---	2-8
Thurber needlegrass	STTE2	---	5-15	---	---	2-8	40-50	25-35
basin wildrye	ELCI2	---	2-5	---	---	2-15	5-15	---
bluebunch wheatgrass	AGSP	---	40-60	---	---	20-40	---	---
bluegrass	POA++	5-15	2-8	5-15	---	---	2-5	---
muttongrass	POFE	---	---	---	---	---	---	---
needlegrass	STIPA	5-10	---	5-10	---	---	---	---
western needlegrass	STOC2	---	---	---	---	---	---	---
arrowleaf balsamroot	BASA3	---	2-5	---	---	1-5	---	---
helianthella	HELIA	---	---	---	---	1-2	---	---
tapertip hawksbeard	CRAC2	---	2-5	---	---	1-5	---	---
white stoneseed	LIRU4	---	---	---	---	1-2	---	---
Nevada ephedra	EPNE	---	---	---	---	---	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	25-35
big sagebrush	ARTR2	---	15-25	---	---	---	15-25	---
low sagebrush	ARAR8	20-30	---	20-30	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	15-25	---	---
spiny hopsage	GRSP	---	---	---	---	---	---	2-8

Range site number	027XY046NV	024XY028NV	027XY046NV	none	024XY021NV	027XY058NV	027XY007NV
Potential production (lb/acre):							
Favorable years	600	1000	600		1400	1200	700
Normal years	400	700	400		1000	1000	500
Unfavorable years	250	500	250		700	700	300

## 860--TEGURO-COLBAR-CLEAVAGE ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		TEGURO	COLBAR	CLEAVAGE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	X	---	---	---	---	---	X
Cusick bluegrass	POCU3	---	---	---	---	---	---	---
Idaho fescue	FEID	X	---	15-25	---	25-35	---	X
Indian ricegrass	ORRY	X	5-10	---	---	---	---	X
Sandberg bluegrass	POSE	X	---	---	---	---	2-8	X
Thurber needlegrass	STTH2	X	---	---	---	---	20-35	X
Webber ricegrass	STWE	---	---	2-5	---	---	---	---
bluebunch wheatgrass	AGSP	---	---	2-5	---	---	---	---
bluegrass	POA++	---	---	5-10	---	5-15	---	---
bottlebrush squirreltail	SIHY	X	5-10	---	---	---	---	X
desert needlegrass	STSP3	---	15-25	---	---	---	2-5	---
muttongrass	POFE	---	---	---	---	---	---	---
needlegrass	STIPA	---	---	---	---	5-10	---	---
pine bluegrass	POSC	---	---	---	---	---	---	---
western needlegrass	STOC2	---	---	---	---	---	---	---
arrowleaf balsamroot	BASA2	X	---	---	---	---	---	X
goldenweed	HAPLO2	---	---	2-5	---	---	---	---
tapertip hawksbeard	CRAC2	X	---	---	---	---	---	X
Lahontan sagebrush	ARTEM	---	---	25-40	---	---	30-35	---
sagebrush	ARTEM	---	---	---	---	---	---	---
Nevada ephedra	EPNE	---	5-10	---	---	---	---	---
Wyoming big sagebrush	ARTRW	---	20-35	---	---	---	---	---
antelope bitterbrush	PUTR2	X	---	---	---	---	---	X
black sagebrush	ARARN	---	---	---	---	---	---	---
ephedra	EPHED	X	---	---	---	---	---	X
low sagebrush	ARARS	---	---	---	---	20-30	---	---
mountain big sagebrush	ARVA2	X	---	---	---	---	---	X
purple sage	SADOC2	---	5-10	---	---	---	---	---
Lahontan sagebrush	ARTEM	---	---	25-40	---	---	30-35	---
sagebrush	ARTEM	---	---	---	---	---	---	---
serviceberry	AMELA	X	---	---	---	---	---	X
spiny hopsage	GRSP	---	---	---	---	---	2-5	---
Utah juniper	JUOS	X	---	---	---	---	---	X
singleleaf pinyon	PIMO	X	---	---	---	---	---	X

Range site number	027XY082NV	027XY051NV	024XY016NV	none	027XY046NV	027XY079NV	027XY082NV
Potential production (lb/acre):							
Favorable years	700	500	350		600	500	700
Normal years	500	350	250		400	350	500
Unfavorable years	300	200	150		250	200	300

## 870--CHILL-CLEAVAGE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		CHILL	CLEAVAGE	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---
Idaho fescue	FEID	---	25-35	20-40	---	---
Indian ricegrass	ORRY	5-15	---	---	---	5-15
Sandberg bluegrass	POSE	2-8	---	---	---	2-8
Thurber needlegrass	STTH2	25-35	---	2-8	---	25-35
basin wildrye	ELCI2	---	---	2-15	---	---
bluebunch wheatgrass	AGSP	---	---	20-40	---	---
bluegrass	POA++	---	5-15	---	---	---
muttongrass	POFE	---	---	---	---	---
needlegrass	STIPA	---	5-10	---	---	---
western needlegrass	STOC2	---	---	---	---	---
arrowleaf balsamroot	BASA3	---	---	1-5	---	---
helianthella	HELIA	---	---	1-2	---	---
tapertip hawksbeard	CRAC2	---	---	1-5	---	---
white stoneseed	LIRU4	---	---	1-2	---	---
Nevada ephedra	EPNE	2-5	---	---	---	2-5
Wyoming big sagebrush	ARTRW	25-35	---	---	---	25-35
low sagebrush	ARARS	---	20-30	---	---	---
mountain big sagebrush	ARVA2	---	---	15-25	---	---
spiny hopsage	GRSP	2-8	---	---	---	2-8
Range site number		027XY007NV	027XY046NV	024XY021NV	none	027XY007NV
Potential production (lb/acre):						
Favorable years		700	600	1400		700
Normal years		500	400	1000		500
Unfavorable years		300	250	700		300

## 880--COPPEREID-SINGATSE-FINDOUT ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		COPPEREID	SINGATSE	FINDOUT	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	---	15-25	5-15	5-15	15-25	5-15
Sandberg bluegrass	POSE	2-8	---	---	---	---	2-8
Thurber needlegrass	STTH2	20-35	---	---	---	---	25-35
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	---	---	---	2-5	---	---
desert needlegrass	STSP3	2-5	2-10	40-60	2-8	---	---
globemallow	SPHAE	---	---	1-3	---	---	---
Anderson wolfberry	LYAN	---	---	2-5	---	---	---
Bailey greasewood	SAVEE	---	---	---	15-30	---	---
Lahontan sagebrush	ARTEM	30-35	---	---	---	---	---
Nevada ephedra	EPNE	---	2-5	2-5	---	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	---	25-35
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
bud sagebrush	ARSP5	---	2-8	---	2-8	---	---
rabbitbrush	CHRY99	---	---	---	---	2-5	---
shadscale	ATCO	---	30-40	20-35	15-35	---	---
spiny hopsage	GRSP	2-5	---	2-8	---	10-20	2-8
winterfat	EULA5	---	2-8	---	---	---	---
Range site number		027XY079NV	027XY027NV	027XY017NV	027XY019NV	027XY029NV	027XY007NV
Potential production (lb/acre):							
Favorable years		500	200	400	300	800	700
Normal years		350	100	200	175	500	500
Unfavorable years		200	50	100	50	300	300

## 900--PLAYAS

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions
		Soil name or Inclusion number--
		PLAYAS

Range site number

none

Potential production (lb/acre):

Favorable years

Normal years

Unfavorable years

## 901--DUNE LAND-ISOLDE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		DUNE LAND	ISOLDE	Inclusion 1
Indian ricegrass	OREY	---	20-30	50-70
needleandthread	STCO4	---	5-15	5-15
Nevada dalea	PSFO	---	---	0-5
Nevada dalea	PAPO	---	2-8	---
fourwing saltbush	ATCA2	---	15-25	10-20
hairy horsebrush	TECO2	---	25-35	---
littleleaf horsebrush	TEGL	---	2-5	---
spiny hopsage	GRSP	---	---	2-5
winterfat	EULA5	---	---	2-8
Range site number		none	027XY023NV	027XY009NV
Potential production (lb/acre):				
Favorable years			700	700
Normal years			500	450
Unfavorable years			300	250

## 902--BADLAND

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions
		Soil name or Inclusion number--
		BADLAND

Range site number

none

Potential production (lb/acre):

Favorable years

Normal years

Unfavorable years



## 903--BADLAND-REBEL-YODY ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BADLAND	REBEL	YODY	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---	X
Indian ricegrass	OREY	---	20-25	20-25	20-25	10-20	X
Sandberg bluegrass	POSE	---	2-5	2-5	2-5	2-5	X
Thurber needlegrass	STTH2	---	---	---	---	---	X
bottlebrush squirreltail	SIHY	---	2-5	2-5	2-5	2-5	X
needleandthread	STCO4	---	5-15	5-15	5-15	10-20	---
arrowleaf balsamroot	BASA2	---	---	---	---	---	X
tapertip hawksbeard	CRAC2	---	---	---	---	---	X
Nevada ephedra	EPNE	---	2-5	2-5	2-5	---	---
Wyoming big sagebrush	ARTRW	---	20-30	20-30	20-30	---	X
black sagebrush	ARARN	---	---	---	---	35-45	---
ephedra	EPHED	---	---	---	---	---	X
shadscale	ATCO	---	---	---	---	2-5	---
spiny hopsage	GRSP	---	10-25	10-25	10-25	---	---
winterfat	EULA5	---	2-5	2-5	2-5	---	---
Utah juniper	JUOS	---	---	---	---	---	X
singleleaf pinyon	PIMO	---	---	---	---	---	X
Range site number		none	027XY008NV	027XY008NV	027XY008NV	028BY016NV	027XY081NV
Potential production (lb/acre):							
Favorable years			700	700	700	350	500
Normal years			500	500	500	225	300
Unfavorable years			300	300	300	100	200

## 910--THERIOT-FINDOUT-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		THERIOT	FINDOUT	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	2-5	5-15	---	15-25	5-15	5-15
bottlebrush squirreltail	SIHY	---	---	---	---	2-5	2-5
desert needlegrass	STSP3	5-10	40-60	---	2-10	2-8	2-8
galleta	HIJA	5-10	---	---	---	---	---
needleandthread	STCO4	2-8	---	---	---	---	---
globemallow	SPHAE	---	1-3	---	---	---	---
Anderson wolfberry	LYAN	5-10	2-5	---	---	---	---
Bailey greasewood	SAVEB	5-10	---	---	---	15-30	15-30
Nevada ephedra	EPNE	2-8	2-5	---	2-5	---	---
bud sagebrush	ARSP5	2-5	---	---	2-8	2-8	2-8
shadscale	ATCO	2-5	20-35	---	30-40	15-35	15-35
spiny hopsage	GRSP	---	2-8	---	---	---	---
spiny menodora	MESP2	25-35	---	---	---	---	---
winterfat	EULA5	2-5	---	---	2-8	---	---

Range site number	029XY037NV	027XY017NV	none	027XY027NV	027XY019NV	027XY019NV
Potential production (lb/acre):						
Favorable years	300	400		200	300	300
Normal years	200	200		100	175	175
Unfavorable years	100	100		50	50	50

## 930--LAYVIEW-PACKER-HAPGOOD ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		LAYVIEW	PACKER	HAPGOOD	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	---	---	---	---	---	X	---
Columbia needlegrass	STNE3	---	---	5-10	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---	---
Idaho fescue	FEID	15-25	15-25	5-10	---	---	X	---
Indian ricegrass	ORHY	---	---	---	---	---	X	---
Nevada bluegrass	PONE3	---	---	2-5	---	---	---	15-25
Sandberg bluegrass	POSE	---	---	---	---	---	X	---
Thurber needlegrass	STTH2	---	---	---	5-15	---	X	---
Webber ricegrass	STWE	2-5	2-5	---	---	---	---	---
basin wildrye	ELCI2	---	---	---	2-5	---	---	---
bluebunch wheatgrass	AGSP	2-5	2-5	5-10	40-60	---	---	---
bluegrass	POA++	5-10	5-10	---	2-8	---	---	---
bottlebrush squirreltail	SIHY	---	---	---	---	---	X	---
meadow barley	HOBR2	---	---	---	---	---	---	2-5
mountain brome	BRCA5	---	---	15-30	---	---	---	---
pine bluegrass	POSC	---	---	---	---	---	---	---
rush	JUNCU	---	---	---	---	---	---	10-15
sedge	CAREX	---	---	---	---	---	---	20-35
slender wheatgrass	AGTR	---	---	5-10	---	---	---	---
arrowleaf balsamroot	BASA3	---	---	---	2-5	---	---	---
arrowleaf balsamroot	BASA2	---	---	---	---	---	X	---
goldenweed	HAPLO2	2-5	2-5	---	---	---	---	---
tapertip hawksbeard	CRAC2	---	---	---	2-5	---	X	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	---
antelope bitterbrush	PUTR2	---	---	---	---	---	X	---
big sagebrush	ARTR2	---	---	---	15-25	---	---	---
black sagebrush	ARARN	---	---	---	---	---	---	---
ephedra	EPHED	---	---	---	---	---	X	---
low sagebrush	ARAR8	---	---	---	---	---	---	---
mountain big sagebrush	ARVA2	---	---	10-20	---	---	X	---
sagebrush	ARTEM	25-40	25-40	---	---	---	---	---
serviceberry	AMELA	---	---	2-10	---	---	X	---
snowberry	SYMPH	---	---	2-5	---	---	---	---
Utah juniper	JUOS	---	---	---	---	---	X	---
singleleaf pinyon	PIMO	---	---	---	---	---	X	---

Range site number	024XY016NV	024XY016NV	024XY032NV	024XY028NV	none	027XY082NV	027XY004NV
Potential production (lb/acre):							
Favorable years	350	350	2200	1000		700	2500
Normal years	250	250	1700	700		500	1500
Unfavorable years	150	150	1200	500		300	1000

## 940--OLD CAMP-RUBBLE LAND ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		OLD CAMP	OLD CAMP	RUBBLE LAND	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	5-15	5-10	---	5-15	5-15	15-25	---
Sandberg bluegrass	POSE	2-8	---	---	---	---	---	2-8
Thurber needlegrass	STTH2	25-35	---	---	---	---	---	20-35
bottlebrush squirreltail	SIRY	---	5-10	---	---	2-5	---	---
desert needlegrass	STSP3	---	15-25	---	40-60	2-8	2-10	2-5
globemallow	SPHAE	---	---	---	1-3	---	---	---
Anderson wolfberry	LYAN	---	---	---	2-5	---	---	---
Bailey greasewood	SAVEB	---	---	---	---	15-30	---	---
Lahontan sagebrush	ARTEM	---	---	---	---	---	---	30-35
Nevada ephedra	EPNE	2-5	5-10	---	2-5	---	2-5	---
Wyoming big sagebrush	ARTRW	25-35	20-35	---	---	---	---	---
bud sagebrush	ARSP5	---	---	---	---	2-8	2-8	---
purple sage	SADOC2	---	5-10	---	---	---	---	---
shadscale	ATCO	---	---	---	20-35	15-35	30-40	---
spiny hopsage	GRSP	2-8	---	---	2-8	---	---	2-5
winterfat	EULA5	---	---	---	---	---	2-8	---
Range site number		027XY007NV	027XY051NV	none	027XY017NV	027XY019NV	027XY027NV	027XY079NV
Potential production (lb/acre):								
Favorable years		700	500		400	300	200	500
Normal years		500	350		200	175	100	350
Unfavorable years		300	200		100	50	50	200

## 960--KOLDA-UMBERLAND ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		KOLDA	UMBERLAND	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Baltic rush	JUBA	---	---	5-10	---	---	---
alkali bluegrass	POJU	---	30-50	---	---	---	---
alkali bulrush	SCRO	10-15	---	---	---	---	---
alkali sacaton	SPAI	---	---	30-45	---	---	---
basin wildrye	ELCI2	---	---	2-5	---	---	---
cattail	TYPHA	20-30	---	---	---	---	---
creeping spikerush	ELPA3	15-25	---	---	---	---	---
inland saltgrass	DISPS2	---	5-10	10-15	60-90	---	---
rush	JUNCU	5-10	25-35	---	---	---	---
sedge	CAREX	5-10	10-15	---	---	---	---
western wheatgrass	AGSM	---	---	2-5	---	---	---
glasswort	SALIC	---	2-5	---	---	---	---
other perennial forbs	PPFF	---	---	---	1-2	---	---

Range site number	027XY001NV	027XY069NV	027XY005NV	026XY002NV	none	none
Potential production (lb/acre):						
Favorable years	4000	3000	3000	2000		
Normal years	2800	2500	2200	1700		
Unfavorable years	2000	2000	1000	1200		

## 970--JOBPEAK-TEGURO-ROCK OUTCROP ASSOCIATION

[An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable.  
Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		JOBPEAK	TEGURO	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	X	X	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	5-15	---	---	---
Idaho fescue	FEID	X	X	---	50-60	---	---	---
Indian ricegrass	ORHY	X	X	---	---	15-25	---	---
Sandberg bluegrass	POSE	X	X	---	---	---	---	2-8
Thurber needlegrass	STTH2	X	X	---	---	---	5-15	20-35
basin wildrye	ELCI2	---	---	---	---	---	2-5	---
bluebunch wheatgrass	AGSP	---	---	---	5-15	---	40-60	---
bluegrass	POA++	---	---	---	---	---	2-8	---
bottlebrush squirreltail	SIHY	X	X	---	---	---	---	---
desert needlegrass	STSP3	---	---	---	---	2-10	---	2-5
arrowleaf balsamroot	BASA3	---	---	---	---	---	2-5	---
arrowleaf balsamroot	BASA2	X	X	---	---	---	---	---
tapertip hawksbeard	CRAC2	X	X	---	---	---	2-5	---
Lahontan sagebrush	ARTEM	---	---	---	---	---	---	30-35
Nevada ephedra	EPNE	---	---	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	---
antelope bitterbrush	PUTR2	X	X	---	---	---	---	---
big sagebrush	ARTR2	---	---	---	---	---	15-25	---
bud sagebrush	ARSP5	---	---	---	---	2-8	---	---
ephedra	EPHED	X	X	---	---	---	---	---
mountain big sagebrush	ARVA2	X	X	---	5-15	---	---	---
serviceberry	AMELA	X	X	---	---	---	---	---
shadscale	ATCO	---	---	---	---	30-40	---	---
snowberry	SYMPH	---	---	---	2-5	---	---	---
spiny hopsage	GRSP	---	---	---	---	---	---	2-5
winterfat	EULA5	---	---	---	---	2-8	---	---
Utah juniper	JUOS	X	X	---	---	---	---	---
singleleaf pinyon	PIMO	X	X	---	---	---	---	---

Range site number	027XY082NV	027XY082NV	none	024XY023NV	027XY027NV	024XY028NV	027XY079NV
Potential production (lb/acre):							
Favorable years	700	700		1500	200	1000	500
Normal years	500	500		1200	100	700	350
Unfavorable years	300	300		900	50	500	200

## 980--MADELINE-MILLERLUX ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		MADELINE	MILLERLUX	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	2-5	---
Idaho fescue	FEID	---	15-25	---	5-15	---
Letterman needlegrass	STLE4	---	---	---	2-5	---
Nevada bluegrass	PONE3	---	---	---	2-5	---
Sandberg bluegrass	POSE	---	---	---	---	---
Thurber needlegrass	STHE2	40-50	---	---	---	---
Webber ricegrass	STWE	---	2-5	---	---	---
basin wildrye	ELCI2	5-15	---	---	2-5	60-80
bluebunch wheatgrass	AGSP	---	2-5	---	5-15	---
bluegrass	POA++	2-5	5-10	---	---	---
creeping wildrye	ELTR3	---	---	---	---	5-15
mountain brome	BRCA5	---	---	---	5-10	---
pine bluegrass	POSC	---	---	---	---	---
slender wheatgrass	AGTR	---	---	---	2-5	---
western wheatgrass	AGSM	---	---	---	---	5-15
goldenweed	HAPLO2	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---
basin big sagebrush	ARTET	---	---	---	---	5-15
big sagebrush	ARTR2	15-25	---	---	---	---
black sagebrush	ARARN	---	---	---	---	---
currant	RIBES	---	---	---	2-8	---
low sagebrush	ARAR8	---	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	5-15	---
oceanspray	HOLOD	---	---	---	5-15	---
sagebrush	ARTEM	---	25-40	---	---	---
serviceberry	AMELA	---	---	---	5-15	---
snowberry	SYMPH	---	---	---	2-10	---
threetip sagebrush	ARTR4	---	---	---	2-10	---
Range site number		027XY058NV	024XY016NV	none	024XY034NV	027XY003NV
Potential production (lb/acre):						
Favorable years		1200	350		1600	3500
Normal years		1000	250		1200	2000
Unfavorable years		700	150		800	1000

## 990--MILLERLUX-WINEMILE-MADELINE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		MILLERLUX	WINEMILE	MADELINE	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---
Idaho fescue	FEID	15-25	25-35	---	---	15-25	---
Nevada bluegrass	PONE3	---	---	---	---	---	15-25
Sandberg bluegrass	POSE	---	---	---	---	---	---
Thurber needlegrass	STTH2	---	---	40-50	---	---	---
Webber ricegrass	STWE	2-5	---	---	---	2-5	---
basin wildrye	ELCI2	---	---	5-15	---	---	---
bluebunch wheatgrass	AGSP	2-5	---	---	---	2-5	---
bluegrass	POA++	5-10	5-15	2-5	---	5-10	---
meadow barley	HOBR2	---	---	---	---	---	2-5
muttongrass	POFE	---	---	---	---	---	---
needlegrass	STIPA	---	5-10	---	---	---	---
pine bluegrass	POSC	---	---	---	---	---	---
rush	JUNCU	---	---	---	---	---	10-15
sedge	CAREX	---	---	---	---	---	20-35
western needlegrass	STOC2	---	---	---	---	---	---
goldenweed	HAPLO2	2-5	---	---	---	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---
big sagebrush	ARTR2	---	---	15-25	---	---	---
black sagebrush	ARARN	---	---	---	---	---	---
low sagebrush	ARARS	---	20-30	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
sagebrush	ARTEM	25-40	---	---	---	25-40	---

Range site number	024XY016NV	027XY046NV	027XY058NV	none	024XY016NV	027XY004NV
Potential production (lb/acre):						
Favorable years	350	600	1200		350	2500
Normal years	250	400	1000		250	1500
Unfavorable years	150	250	700		150	1000



## 1000--STUMBLE LOAMY SAND, 2 TO 4 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		STUMBLE	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	50-70	10-20	20-30
Sandberg bluegrass	POSE	---	5-10	---
bottlebrush squirreltail	SIHY	---	2-8	---
inland saltgrass	DISPS2	---	---	2-5
needleandthread	STCO4	5-15	---	---
Bailey greasewood	SAVEB	---	15-30	---
Nevada dalea	PSPO	0-5	---	---
black greasewood	SAVE4	---	---	30-50
bud sagebrush	ARSP5	---	2-8	---
fourwing saltbush	ATCA2	10-20	---	2-5
shadscale	ATCO	---	15-30	2-5
spiny hopsage	GRSP	2-5	---	---
winterfat	EULA5	2-8	---	---

Range site number	027XY009NV	027XY018NV	027XY016NV
Potential production (lb/acre):			
Favorable years	700	400	500
Normal years	450	250	300
Unfavorable years	250	100	150

## 1010--DOWNEYVILLE-STEWVAL-BLACKTOP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		DOWNEYVILLE	STEWVAL	BLACKTOP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	5-10	5-15	2-5	---	5-15	15-25
Sandberg bluegrass	POSE	---	---	---	---	2-8	---
Thurber needlegrass	STTH2	---	---	---	---	30-40	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-5	---	---	---	---	---
desert needlegrass	STSP3	2-8	---	---	---	---	---
galleta	HIJA	5-15	2-8	---	---	---	---
needleandthread	STCO4	---	10-20	---	---	---	---
Bailey greasewood	SAVEB	5-15	---	5-15	---	---	---
Cooper wolfberry	LYCO2	---	---	1-5	---	---	---
Nevada dalea	PSPO	---	---	1-5	---	---	---
Nevada ephedra	EPNE	2-5	2-8	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
black sagebrush	ARAEN	---	35-45	---	---	25-35	---
bud sagebrush	ARSP5	5-10	---	---	---	---	---
rabbitbrush	CHRY59	---	---	---	---	---	2-5
shadscale	ATCO	25-35	1-5	50-70	---	---	---
spiny hopsage	GRSP	---	---	---	---	---	10-20
winterfat	EULA5	5-10	---	---	---	---	---

Range site number	029XY022NV	029XY014NV	029XY033NV	none	027XY032NV	027XY029NV
Potential production (lb/acre):						
Favorable years	400	350	100		500	800
Normal years	250	200	50		300	500
Unfavorable years	100	75	25		200	300

## 1011--DOWNEYVILLE-BLACKTOP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		DOWNEYVILLE	BLACKTOP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-10	2-5	---	15-25	5-15	5-10
bottlebrush squirreltail	SIHY	2-5	---	---	2-5	2-5	---
desert needlegrass	STSP3	2-8	---	---	---	2-8	---
galleta	HIJA	5-15	---	---	2-10	---	---
Bailey greasewood	SAVEB	5-15	5-15	---	0-10	15-30	2-10
Cooper wolfberry	LYCO2	---	1-5	---	---	---	2-5
Nevada dalea	PSPO	---	1-5	---	---	---	---
Nevada ephedra	EPNE	2-5	---	---	1-5	---	2-5
bud sagebrush	ARSP5	5-10	---	---	5-15	2-8	---
burrobrush	HYMEN3	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	---	5-15
littleleaf horsebrush	TEGL	---	---	---	---	---	5-10
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25
shadscale	ATCO	25-35	50-70	---	25-35	15-35	---
winterfat	EULA5	5-10	---	---	5-10	---	---
Range site number		029XY022NV	029XY033NV	none	029XY017NV	027XY019NV	029XY041NV
Potential production (lb/acre):							
Favorable years		400	100		500	300	500
Normal years		250	50		350	175	300
Unfavorable years		100	25		150	50	100

## 1012--DOWNEYVILLE, MOIST-DOWNEYVILLE-BLACKTOP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		DOWNEYVILLE	DOWNEYVILLE	BLACKTOP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	2-5	5-10	2-5	5-15	5-15	5-10	---
Sandberg bluegrass	POSE	---	---	---	2-8	---	---	---
Thurber needlegrass	STH2	---	---	---	25-35	---	---	---
bottlebrush squirreltail	SIHY	---	2-5	---	---	2-5	---	---
desert needlegrass	STSP3	5-10	2-8	---	---	2-8	---	---
galleta	HIJA	5-10	5-15	---	---	---	---	---
needleandthread	STCO4	2-8	---	---	---	---	---	---
Anderson wolfberry	LYAN	5-10	---	---	---	---	---	---
Bailey greasewood	SAVEB	5-10	5-15	5-15	---	15-30	2-10	---
Cooper wolfberry	LYCO2	---	---	1-5	---	---	2-5	---
Nevada dalea	PSPO	---	---	1-5	---	---	---	---
Nevada ephedra	EPNE	2-8	2-5	---	2-5	---	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	25-35	---	---	---
bud sagebrush	ARSP5	2-5	5-10	---	---	2-8	---	---
burrobrush	HYMEN3	---	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	---	5-15	---
littleleaf horsebrush	TEGL	---	---	---	---	---	5-10	---
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-25	---
shadscale	ATCO	2-5	25-35	50-70	---	15-35	---	---
spiny hopsage	GRSP	---	---	---	2-8	---	---	---
spiny menodora	MESP2	25-35	---	---	---	---	---	---
winterfat	EULA5	2-5	5-10	---	---	---	---	---

Range site number	029XY037NV	029XY022NV	029XY033NV	027XY007NV	027XY019NV	029XY041NV	none
Potential production (lb/acre):							
Favorable years	300	400	100	700	300	500	
Normal years	200	250	50	500	175	300	
Unfavorable years	100	100	25	300	50	100	

## 1013--DOWNEYVILLE-GABEVALLY ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		DOWNEYVILLE	DOWNEYVILLE	GABEVALLY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	2-5	5-10	10-15	---	10-15	5-15
Sandberg bluegrass	POSE	---	---	2-5	---	---	2-8
Thurber needlegrass	STTH2	---	---	---	---	---	30-40
bottlebrush squirreltail	SIHY	---	2-5	---	---	---	---
desert needlegrass	STSP3	5-10	2-8	2-8	---	---	---
galleta	HIJA	5-10	5-15	2-8	---	2-8	---
needleandthread	STCO4	2-8	---	15-25	---	---	---
Anderson wolfberry	LYAN	5-10	---	---	---	---	---
Bailey greasewood	SAVEB	5-10	5-15	---	---	5-15	---
Nevada ephedra	EPNE	2-8	2-5	---	---	2-8	---
Wyoming big sagebrush	ARTRW	---	---	30-35	---	---	---
black sagebrush	ARARN	---	---	---	---	---	25-35
bud sagebrush	ARSP5	2-5	5-10	---	---	2-5	---
ephedra	EPHED	---	---	2-8	---	---	---
fourwing saltbush	ATCA2	---	---	2-5	---	---	---
green ephedra	EPVI	---	---	---	---	---	---
shadscale	ATCO	2-5	25-35	---	---	5-15	---
spiny menodora	MESP2	25-35	---	---	---	35-45	---
winterfat	EULA5	2-5	5-10	---	---	---	---
Range site number							
		029XY037NV	029XY022NV	029XY010NV	none	029XY036NV	027XY032NV
Potential production (lb/acre):							
Favorable years		300	400	500		400	500
Normal years		200	250	350		300	300
Unfavorable years		100	100	250		100	200

## 1020--UNSEL-ANNAW-IZO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		UNSEL	ANNAW	IZO	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	15-25	15-25	5-10	15-25	5-10
bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	2-5
desert needlegrass	STSP3	---	---	---	---	2-8
galleta	HIJA	2-10	2-10	---	2-10	5-15
Bailey greasewood	SAVEB	0-10	0-10	2-10	0-10	5-15
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Nevada ephedra	EPNE	1-5	1-5	2-5	1-5	2-5
bud sagebrush	ARSP5	5-15	5-15	---	5-15	5-10
burrobrush	HYMEN3	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	5-15	---	---
littleleaf horsebrush	TEGL	---	---	5-10	---	---
rubber rabbitbrush	CHNA2	---	---	10-25	---	---
shadscale	ATCO	25-35	25-35	---	25-35	25-35
winterfat	EULA5	5-10	5-10	---	5-10	5-10

Range site number	029XY017NV	029XY017NV	029XY041NV	029XY017NV	029XY022NV
Potential production (lb/acre):					
Favorable years	500	500	500	500	400
Normal years	350	350	300	350	250
Unfavorable years	150	150	100	150	100

## 1023--UNSEL-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		UNSEL	PINEVAL	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	15-25	20-25	15-25	15-25
Sandberg bluegrass	POSE	---	2-5	---	---
basin wildrye	ELCI2	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5
galleta	HIJA	2-10	---	---	2-10
needleandthread	STCO4	---	5-15	---	---
Bailey greasewood	SAVEB	0-10	---	---	0-10
Nevada ephedra	EPNE	1-5	2-5	---	1-5
Wyoming big sagebrush	ARTRW	---	20-30	---	---
basin big sagebrush	ARTRT	---	---	20-30	---
bud sagebrush	ARSP5	5-15	---	---	5-15
rabbitbrush	CHRY9	---	---	2-5	---
shadscale	ATCO	25-35	---	---	25-35
spiny hopsage	GRSP	---	10-25	10-20	---
winterfat	EULA5	5-10	2-5	---	5-10
Range site number		029XY017NV	027XY008NV	027XY029NV	029XY017NV
Potential production (lb/acre):					
Favorable years		500	700	800	500
Normal years		350	500	500	350
Unfavorable years		150	300	300	150

## 1024--UNSEL-DESATOYA-ROIC ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		UNSEL	DESATOYA	ROIC	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	5-15	10-20	15-25	15-25	20-25
Sandberg bluegrass	POSE	---	2-8	---	---	---	2-5
Thurber needlegrass	STH2	---	30-40	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIRY	2-5	---	---	2-5	---	2-5
dropseed	SPOR0	---	---	2-5	---	---	---
galleta	HIJA	2-10	---	---	2-10	---	---
needleandthread	STCO4	---	---	---	---	---	5-15
Bailey greasewood	SAVEB	0-10	---	5-15	0-10	---	---
Cooper wolfberry	LYCO2	---	---	10-20	---	---	---
Nevada ephedra	EPNE	1-5	---	---	1-5	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	---	20-30
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
black sagebrush	ARARN	---	25-35	---	---	---	---
bud sagebrush	ARSP5	5-15	---	---	5-15	---	---
rabbitbrush	CHRY59	---	---	---	---	2-5	---
shadscale	ATCO	25-35	---	20-30	25-35	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	10-25
winterfat	EULA5	5-10	---	---	5-10	---	2-5

Range site number	029XY017NV	027XY032NV	027XY043NV	029XY017NV	027XY029NV	027XY008NV
Potential production (lb/acre):						
Favorable years	500	500	350	500	800	700
Normal years	350	300	200	350	500	500
Unfavorable years	150	200	100	150	300	300



## 1025--UNSEL-DESATOYA-PINEVAL ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		UNSEL	DESATOYA	PINEVAL	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	15-25	5-15	20-25	15-25	15-25
Sandberg bluegrass	POSE	---	2-8	2-5	---	---
Thurber needlegrass	STH2	---	30-40	---	---	---
basin wildrye	ELCI2	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-5	---	2-5	---	2-5
galleta	HIJA	2-10	---	---	---	2-10
needleandthread	STCO4	---	---	5-15	---	---
Bailey greasewood	SAVEB	0-10	---	---	---	0-10
Nevada ephedra	EPNE	1-5	---	2-5	---	1-5
Wyoming big sagebrush	ARTRW	---	---	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---
black sagebrush	ARARN	---	25-35	---	---	---
bud sagebrush	ARSP5	5-15	---	---	---	5-15
rabbitbrush	CHRY9	---	---	---	2-5	---
shadscale	ATCO	25-35	---	---	---	25-35
spiny hopsage	GRSP	---	---	10-25	10-20	---
winterfat	EULA5	5-10	---	2-5	---	5-10
Range site number		029XY017NV	027XY032NV	027XY008NV	027XY029NV	029XY017NV
Potential production (lb/acre):						
Favorable years		500	500	700	800	500
Normal years		350	300	500	500	350
Unfavorable years		150	200	300	300	150

## 1026--UNSEL-PINEVAL-DEFLER ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		UNSEL	PINEVAL	DEFLER	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	20-25	40-50	20-25	15-25	15-30
Sandberg bluegrass	POSE	---	2-5	---	2-5	---	2-15
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-5	2-5	2-5	2-5	---	2-8
galleta	HIJA	2-10	---	---	---	---	---
needleandthread	STCO4	---	5-15	5-15	5-15	---	---
globemallow	SPHAE	---	---	2-5	---	---	---
Bailey greasewood	SAVEB	0-10	---	---	---	---	---
Nevada ephedra	EPNE	1-5	2-5	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	20-30	---	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
bud sagebrush	ARSP5	5-15	---	5-15	---	---	15-25
rabbitbrush	CHRS9	---	---	---	---	2-5	---
shadscale	ATCO	25-35	---	---	---	---	20-35
spiny hopsage	GRSP	---	10-25	---	10-25	10-20	---
winterfat	EULA5	5-10	2-5	25-30	2-5	---	5-10

Range site number	029XY017NV	027XY008NV	027XY014NV	027XY008NV	027XY029NV	027XY013NV
Potential production (lb/acre):						
Favorable years	500	700	700	700	800	600
Normal years	350	500	500	500	500	450
Unfavorable years	150	300	350	300	300	250

## 1027--UNSEL-ROIC-ANNAW ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		UNSEL	ROIC	ANNAW	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	10-20	15-25	---	5-10	15-25
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIEY	2-5	---	2-5	---	5-10	---
dropseed	SPORO	---	2-5	---	---	---	---
galleta	HIJA	2-10	---	2-10	---	---	---
inland saltgrass	DISPS2	---	---	---	2-10	---	---
Bailey greasewood	SAVEB	0-10	5-15	0-10	---	---	---
Cooper wolfberry	LYCO2	---	10-20	---	---	---	---
Nevada ephedra	EPNE	1-5	---	1-5	---	5-10	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
black greasewood	SAVE4	---	---	---	60-70	---	---
bud sagebrush	ARSP5	5-15	---	5-15	---	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rabbitbrush	CHRY9	---	---	---	---	---	2-5
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
seepweed	SUAED	---	---	---	2-8	---	---
shadscale	ATCO	25-35	20-30	25-35	2-10	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	10-20
winterfat	EULA5	5-10	---	5-10	---	---	---

Range site number	029XY017NV	027XY043NV	029XY017NV	027XY025NV	027XY022NV	027XY029NV
Potential production (lb/acre):						
Favorable years	500	350	500	500	400	800
Normal years	350	200	350	350	200	500
Unfavorable years	150	100	150	200	50	300

## 1030--GOLDYKE-BLACKTOP-KOYEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or inclusion number--						
		GOLDYKE	BLACKTOP	KOYEN	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-10	2-5	20-30	15-25	15-25	---	15-25
basin wildrye	ELCI2	---	---	---	---	---	---	5-15
bottlebrush squirreltail	SIRY	2-5	---	---	2-5	2-5	---	---
desert needlegrass	STSP3	2-8	---	---	---	---	---	---
galleta	HIJA	5-15	---	2-8	2-10	2-10	---	---
sand dropseed	SPCR	---	---	2-8	---	---	---	---
globemallow	SPHAE	---	---	1-3	---	---	---	---
Bailey greasewood	SAVEB	5-15	5-15	---	0-10	0-10	---	---
Cooper wolfberry	LYCO2	---	1-5	---	---	---	---	---
Nevada dalea	PSPO	---	1-5	---	---	---	---	---
Nevada ephedra	EPNE	2-5	---	---	1-5	1-5	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	---	20-30
bud sagebrush	ARSP5	5-10	---	2-8	5-15	5-15	---	---
fourwing saltbush	ATCA2	---	---	20-30	---	---	---	---
rabbitbrush	CHRY59	---	---	---	---	---	---	2-5
shadscale	ATCO	25-35	50-70	---	25-35	25-35	---	---
spiny hopsage	GRSP	---	---	2-5	---	---	---	10-20
winterfat	EULA5	5-10	---	10-20	5-10	5-10	---	---
Range site number		029XY022NV	029XY033NV	029XY046NV	029XY017NV	029XY017NV	none	027XY029NV
Potential production (lb/acre):								
Favorable years		400	100	500	500	500		800
Normal years		250	50	400	350	350		500
Unfavorable years		100	25	300	150	150		300

## 1040--TERLCO-ANNAW-IZO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		TERLCO	ANNAW	IZO	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-15	10-15	5-10	15-25	5-10
bottlebrush squirreltail	SIHY	---	---	---	---	2-5
desert needlegrass	STSP3	---	---	---	2-10	2-8
galleta	HIJA	2-8	2-8	---	---	5-15
Bailey greasewood	SAVEB	5-15	5-15	2-10	---	5-15
Cooper wolfberry	LYCO2	---	---	2-5	---	---
Nevada ephedra	EPNE	2-8	2-8	2-5	2-5	2-5
bud sagebrush	ARSP5	2-5	2-5	---	2-8	5-10
burrobrush	HYMEN3	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	5-15	---	---
littleleaf horsebrush	TEGL	---	---	5-10	---	---
rubber rabbitbrush	CHNA2	---	---	10-25	---	---
shadscale	ATCO	5-15	5-15	---	30-40	25-35
spiny menodora	MESP2	35-45	35-45	---	---	---
winterfat	EULA5	---	---	---	2-8	5-10
Range site number		029XY036NV	029XY036NV	029XY041NV	027XY027NV	029XY022NV
Potential production (lb/acre):						
Favorable years		400	400	500	200	400
Normal years		300	300	300	100	250
Unfavorable years		100	100	100	50	100

## 1050--CEEJAY-OLAC-ROCK OUTCROP ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		CEEJAY	OLAC	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	---	---	---	5-15	---	10-20
Sandberg bluegrass	POSE	2-8	2-8	---	2-8	---	5-10
Thurber needlegrass	STTH2	20-35	20-35	---	25-35	---	---
bottlebrush squirreltail	SIHY	---	---	---	---	---	2-8
desert needlegrass	STSP3	2-5	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	---	---	15-30
Lahontan sagebrush	ARTEM	30-35	30-35	---	---	---	---
Nevada ephedra	EPNE	---	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	---	25-35	---	---
bud sagebrush	ARSP5	---	---	---	---	---	2-8
shadscale	ATCO	---	---	---	---	---	15-30
spiny hopsage	GRSP	2-5	2-5	---	2-8	---	---
Range site number		027XY079NV	027XY079NV	none	027XY007NV	none	027XY018NV
Potential production (lb/acre):							
Favorable years		500	500		700		400
Normal years		350	350		500		250
Unfavorable years		200	200		300		100

## 1061--OLAC-THEON-PIROUETTE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		OLAC	THEON	PIROUETTE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	---	5-15	10-20	15-25	10-20	---
Sandberg bluegrass	POSE	2-8	---	5-10	---	5-10	---
Thurber needlegrass	STTH2	20-35	---	---	---	---	---
bottlebrush squirreltail	SIHY	---	2-5	2-8	---	2-8	---
desert needlegrass	STSP3	2-5	2-8	---	2-10	---	---
Bailey greasewood	SAVEB	---	15-30	15-30	---	15-30	---
Lahontan sagebrush	ARTEM	30-35	---	---	---	---	---
Nevada ephedra	EPNE	---	---	---	2-5	---	---
bud sagebrush	ARSP5	---	2-8	2-8	2-8	2-8	---
shadscale	ATCO	---	15-35	15-30	30-40	15-30	---
spiny hopsage	GRSP	2-5	---	---	---	---	---
winterfat	EULA5	---	---	---	2-8	---	---
Range site number		027XY079NV	027XY019NV	027XY018NV	027XY027NV	027XY018NV	none
Potential production (lb/acre):							
Favorable years		500	300	400	200	400	
Normal years		350	175	250	100	250	
Unfavorable years		200	50	100	50	100	

## 1062--OLAC-OLD CAMP-CEEJAY ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		OLAC	OLD CAMP	CEEJAY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	---	5-10	---	10-20	15-25	---
Sandberg bluegrass	POSE	2-8	---	2-8	5-10	---	---
Thurber needlegrass	STTH2	20-35	---	---	---	---	---
bottlebrush squirreltail	SIHY	---	5-10	---	2-8	---	---
desert needlegrass	STSP3	2-5	15-25	30-40	---	2-10	---
Bailey greasewood	SAVEB	---	---	---	15-30	---	---
Lahontan sagebrush	ARTEM	30-35	---	25-35	---	---	---
Nevada ephedra	EPNE	---	5-10	---	---	2-5	---
Wyoming big sagebrush	ARTRW	---	20-35	---	---	---	---
bud sagebrush	AKSP5	---	---	---	2-8	2-8	---
purple sage	SADOC2	---	5-10	---	---	---	---
shadscale	ATCO	---	---	---	15-30	30-40	---
spiny hopsage	GRSP	2-5	---	2-8	---	---	---
winterfat	EULAS	---	---	---	---	2-8	---

Range site number	027XY079NV	027XY051NV	027XY020NV	027XY018NV	027XY027NV	none
Potential production (lb/acre):						
Favorable years	500	500	450	400	200	
Normal years	350	350	300	250	100	
Unfavorable years	200	200	150	100	50	



## 1071--GANAFAN-BLUEWING-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		GANAFAN	BLUEWING	TROCKEN	Inclusion 1
Indian ricegrass	ORHY	10-20	10-20	25-45	5-10
Sandberg bluegrass	POSE	5-10	---	---	---
bottlebrush squirreltail	SIHY	2-8	---	---	5-10
desert needlegrass	STSP3	---	---	2-8	---
dropseed	SPORO	---	2-5	---	---
Bailey greasewood	SAVEB	15-30	5-15	20-30	---
Cooper wolfberry	LYCO2	---	10-20	---	---
Nevada ephedra	EPNE	---	---	---	5-10
bud sagebrush	ARSP5	2-8	---	2-8	---
burrobrush	HYMEN3	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	10-20
shadscale	ATCO	15-30	20-30	5-15	---
spiny hopsage	GRSP	---	---	---	10-20
winterfat	EULA5	---	---	2-8	---
Range site number		027XY018NV	027XY043NV	027XY050NV	027XY022NV
Potential production (lb/acre):					
Favorable years		400	350	500	400
Normal years		250	200	350	200
Unfavorable years		100	100	200	50

## 1090--UMBERLAND-ISOLDE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		UMBERLAND	ISOLDE	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	---	20-30	---	---
alkali sacaton	SPAI	60-70	---	---	---
inland saltgrass	DISPS2	2-10	2-5	---	2-10
black greasewood	SAVE4	1-5	30-50	---	60-70
fourwing saltbush	ATCA2	---	2-5	---	---
iodinebush	ALOC2	10-20	---	---	---
seepweed	SUAED	---	---	---	2-8
shadscale	ATCO	---	2-5	---	2-10
Range site number		024XY010NV	027XY016NV	none	027XY025NV
Potential production (lb/acre):					
Favorable years		450	500		500
Normal years		300	300		350
Unfavorable years		150	150		200

## 1100--THEON-OLAC ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		THEON	OLAC	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	---	15-25	---	---
Sandberg bluegrass	POSE	---	2-8	---	---	---
Thurber needlegrass	STH2	---	20-35	---	---	---
desert needlegrass	STSP3	40-60	2-5	2-10	---	---
globemallow	SPHAE	1-3	---	---	---	---
Anderson wolfberry	LYAN	2-5	---	---	---	---
Lahontan sagebrush	ARTEM	---	30-35	---	---	---
Nevada spheg	EPNE	2-5	---	2-5	---	---
bud sagebrush	ARSP5	---	---	2-8	---	---
shadscale	ATCO	20-35	---	30-40	---	---
spiny hopsage	GRSP	2-8	2-5	---	---	---
winterfat	EULAS	---	---	2-8	---	---
Range site number		027XY017NV	027XY079NV	027XY027NV	none	none
Potential production (lb/acre):						
Favorable years		400	500	200		
Normal years		200	350	100		
Unfavorable years		100	200	50		

## 1101--THEON ASSOCIATION, STEEP

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		THEON	THEON	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-15	15-25	10-20	---
Sandberg bluegrass	POSE	---	---	---	5-10	---
bottlebrush squirreltail	SIHY	---	2-5	---	2-8	---
desert needlegrass	STSP3	40-60	2-8	2-10	---	---
globemallow	SPHAE	1-3	---	---	---	---
Anderson wolfberry	LYAN	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	15-30	---	15-30	---
Nevada ephedra	EPNE	2-5	---	2-5	---	---
bud sagebrush	ARSP5	---	2-8	2-8	2-8	---
shadscale	ATCO	20-35	15-35	30-40	15-30	---
spiny hopsage	GRSP	2-8	---	---	---	---
winterfat	EULA5	---	---	2-8	---	---
Range site number		027XY017NV	027XY019NV	027XY027NV	027XY018NV	none
Potential production (lb/acre):						
Favorable years		400	300	200	400	
Normal years		200	175	100	250	
Unfavorable years		100	50	50	100	

## 1102--THEON ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		THEON	THEON	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	5-15	15-25	10-20	---
Sandberg bluegrass	POSE	---	---	---	5-10	---
bottlebrush squirreltail	SIHY	2-5	---	---	2-8	---
desert needlegrass	STSP3	2-8	40-60	2-10	---	---
globemallow	SPHAE	---	1-3	---	---	---
Anderson wolfberry	LYAN	---	2-5	---	---	---
Bailey greasewood	SAVEB	15-30	---	---	15-30	---
Nevada ephedra	EPNE	---	2-5	2-5	---	---
bud sagebrush	ARSP5	2-8	---	2-8	2-8	---
shadscale	ATCO	15-35	20-35	30-40	15-30	---
spiny hopsage	GRSP	---	2-8	---	---	---
winterfat	EULA5	---	---	2-8	---	---
Range site number		027XY019NV	027XY017NV	027XY027NV	027XY018NV	none
Potential production (lb/acre):						
Favorable years		300	400	200	400	
Normal years		175	200	100	250	
Unfavorable years		50	100	50	100	

## 1104--THEON-ROIC-SINGATSE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		THEON	ROIC	SINGATSE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	15-25	15-25	---	15-25	10-20
Sandberg bluegrass	POSE	---	---	---	---	---	5-10
bottlebrush squirreltail	SIHY	2-5	---	---	---	---	2-8
desert needlegrass	STSP3	2-8	2-10	2-10	---	2-10	---
Bailey greasewood	SAVEB	15-30	---	---	---	---	15-30
Nevada ephedra	EPNE	---	2-5	2-5	---	2-5	---
bud sagebrush	ARSP5	2-8	2-8	2-8	---	2-8	2-8
shadscale	ATCO	15-35	30-40	30-40	---	30-40	15-30
winterfat	EULA5	---	2-8	2-8	---	2-8	---
Range site number		027XY019NV	027XY027NV	027XY027NV	none	027XY027NV	027XY018NV
Potential production (lb/acre):							
Favorable years		300	200	200		200	400
Normal years		175	100	100		100	250
Unfavorable years		50	50	50		50	100

## 1120--PATNA-HAWSLEY-JUVA ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		PATNA	HAWSLEY	JUVA	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	50-70	50-70	10-20	5-10	10-20	10-20
Sandberg bluegrass	POSE	---	---	5-10	---	5-10	5-10
bottlebrush squirreltail	SIHY	---	---	2-8	5-10	2-8	2-8
needleandthread	STCO4	5-15	5-15	---	---	---	---
Bailey greasewood	SAVEB	---	---	15-30	---	15-30	15-30
Nevada dalea	PSPO	0-5	0-5	---	---	---	---
Nevada ephedra	EPNE	---	---	---	5-10	---	---
bud sagebrush	ARSP5	---	---	2-8	---	2-8	2-8
burrobrush	HYMEN3	---	---	---	5-10	---	---
fourwing saltbush	ATCA2	10-20	10-20	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---	---
shadscale	ATCO	---	---	15-30	---	15-30	15-30
spiny hopsage	GRSP	2-5	2-5	---	10-20	---	---
winterfat	EULA5	2-8	2-8	---	---	---	---
Range site number		027XY009NV	027XY009NV	027XY018NV	027XY022NV	027XY018NV	027XY018NV
Potential production (lb/acre):							
Favorable years		700	700	400	400	400	400
Normal years		450	450	250	200	250	250
Unfavorable years		250	250	100	50	100	100

## 1121--PATNA SAND, 0 TO 4 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		PATNA	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	50-70	20-30	50-70
needleandthread	STCO4	5-15	5-15	5-15
Nevada dalea	PSPO	0-5	---	0-5
Nevada dalea	PAPO	---	2-8	---
fourwing saltbush	ATCA2	10-20	15-25	10-20
hairy horsebrush	TECO2	---	25-35	---
littleleaf horsebrush	TEGL	---	2-5	---
spiny hopsage	GRSP	2-5	---	2-5
winterfat	EULA5	2-8	---	2-8
Range site number		027XY009NV	027XY023NV	027XY009NV
Potential production (lb/acre):				
Favorable years		700	700	700
Normal years		450	500	450
Unfavorable years		250	300	250



## 1130--MALPAIS COMPLEX

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		MALPAIS	MALPAIS	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	10-20	10-20	50-70	10-20	15-30
Sandberg bluegrass	POSE	5-10	5-10	---	5-10	2-15
bottlebrush squirreltail	SIEY	2-8	2-8	---	2-8	2-8
needleandthread	STCO4	---	---	5-15	---	---
Bailey greasewood	SAVEB	15-30	15-30	---	15-30	---
Nevada dalea	PSPO	---	---	0-5	---	---
bud sagebrush	ARSP5	2-8	2-8	---	2-8	15-25
fourwing saltbush	ATCA2	---	---	10-20	---	---
shadscale	ATCO	15-30	15-30	---	15-30	20-35
spiny hopsage	GRSP	---	---	2-5	---	---
winterfat	EULA5	---	---	2-8	---	5-10
Range site number		027XY018NV	027XY018NV	027XY009NV	027XY018NV	027XY013NV
Potential production (lb/acre):						
Favorable years		400	400	700	400	600
Normal years		250	250	450	250	450
Unfavorable years		100	100	250	100	250

## 1140--ROIC-BIDDLEMAN-HOOTEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		ROIC	BIDDLEMAN	Hooten	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	10-20	10-15	15-25	25-45	25-45	---
bottlebrush squirreltail	SIHY	---	---	5-10	---	---	---	---
desert needlegrass	STSP3	---	---	---	2-10	2-8	2-8	---
dropseed	SPORO	2-5	2-5	---	---	---	---	---
inland saltgrass	DISPS2	---	---	2-5	---	---	---	---
Bailey greasewood	SAVEB	5-15	5-15	0-5	---	20-30	20-30	---
Cooper wolfberry	LYCO2	10-20	10-20	---	---	---	---	---
Nevada ephedra	EPNE	---	---	---	2-5	---	---	---
black greasewood	SAVE4	---	---	20-30	---	---	---	---
bud sagebrush	ARSP5	---	---	2-5	2-8	2-8	2-8	---
shadscale	ATCO	20-30	20-30	20-35	30-40	5-15	5-15	---
winterfat	EULA5	---	---	---	2-8	2-8	2-8	---

Range site number	027XY043NV	027XY043NV	027XY024NV	027XY027NV	027XY050NV	027XY050NV	none
Potential production (lb/acre):							
Favorable years	350	350	500	200	500	500	
Normal years	200	200	350	100	350	350	
Unfavorable years	100	100	150	50	200	200	

## 1142--ROIC-MAZUMA-CELETON ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		ROIC	MAZUMA	CELETON	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-25	10-20	15-25	---	15-25	10-20	25-45
Sandberg bluegrass	POSE	---	5-10	---	---	---	5-10	---
bottlebrush squirreltail	SIHY	---	2-8	---	---	---	2-8	---
desert needlegrass	STSP3	2-10	---	2-10	---	2-10	---	2-8
Bailey greasewood	SAVEB	---	15-30	---	---	---	15-30	20-30
Nevada ephedra	EPNE	2-5	---	2-5	---	2-5	---	---
bud sagebrush	ARSP5	2-8	2-8	2-8	---	2-8	2-8	2-8
shadscale	ATCO	30-40	15-30	30-40	---	30-40	15-30	5-15
winterfat	EULA5	2-8	---	2-8	---	2-8	---	2-8
Range site number		027XY027NV	027XY018NV	027XY027NV	none	027XY027NV	027XY018NV	027XY050NV
Potential production (lb/acre):								
Favorable years		200	400	200		200	400	500
Normal years		100	250	100		100	250	350
Unfavorable years		50	100	50		50	100	200

## 1143--ROIC-TROCKEN-CELETON ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		ROIC	TROCKEN	CELETON	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	15-25	25-45	15-25	---	15-25
desert needlegrass	STSP3	2-10	2-8	2-10	---	2-10
Bailey greasewood	SAVEB	---	20-30	---	---	---
Nevada sphegra	EPNE	2-5	---	2-5	---	2-5
bud sagebrush	ARSP5	2-8	2-8	2-8	---	2-8
shadscale	ATCO	30-40	5-15	30-40	---	30-40
winterfat	EULA5	2-8	2-8	2-8	---	2-8
Range site number		027XY027NV	027XY050NV	027XY027NV	none	027XY027NV
Potential production (lb/acre):						
Favorable years		200	500	200		200
Normal years		100	350	100		100
Unfavorable years		50	200	50		50

## 1144--ROIC-SINGATSE-CELETON ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ROIC	SINGATSE	CELETON	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	15-25	15-25	25-45	---	10-20
Sandberg bluegrass	POSE	---	---	---	---	---	5-10
bottlebrush squirreltail	SIHY	---	---	---	---	---	2-8
desert needlegrass	STSP3	2-10	2-10	2-10	2-8	---	---
Bailey greasewood	SAVEB	---	---	---	20-30	---	15-30
Nevada ephedra	EPNE	2-5	2-5	2-5	---	---	---
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8	---	2-8
shadscale	ATCO	30-40	30-40	30-40	5-15	---	15-30
winterfat	EULA5	2-8	2-8	2-8	2-8	---	---
Range site number		027XY027NV	027XY027NV	027XY027NV	027XY050NV	none	027XY018NV
Potential production (lb/acre):							
Favorable years		200	200	200	500		400
Normal years		100	100	100	350		250
Unfavorable years		50	50	50	200		100

## 1145--ROIC-PATNA ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		ROIC	PATNA	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	50-70	10-20	15-25	5-15
Sandberg bluegrass	POSE	---	---	5-10	---	---
bottlebrush squirreltail	SIHY	---	---	2-8	---	2-5
desert needlegrass	STSP3	2-10	---	---	2-10	2-8
needleandthread	STCO4	---	5-15	---	---	---
Bailey greasewood	SAVEB	---	---	15-30	---	15-30
Nevada dalea	PSPO	---	0-5	---	---	---
Nevada ephedra	EPNE	2-5	---	---	2-5	---
bud sagebrush	ARSP5	2-8	---	2-8	2-8	2-8
fourwing saltbush	ATCA2	---	10-20	---	---	---
shadscale	ATCO	30-40	---	15-30	30-40	15-35
spiny hopsage	GRSP	---	2-5	---	---	---
winterfat	EULA5	2-8	2-8	---	2-8	---

Range site number	027XY027NV	027XY009NV	027XY018NV	027XY027NV	027XY019NV
Potential production (lb/acre):					
Favorable years	200	700	400	200	300
Normal years	100	450	250	100	175
Unfavorable years	50	250	100	50	50

## 1150--PHING-BUFFARAN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		PHING	BUFFARAN	Inclusion 1
Indian ricegrass	OREY	---	20-25	---
Sandberg bluegrass	POSE	2-8	2-5	5-10
Thurber needlegrass	STTH2	20-35	---	---
bottlebrush squirreltail	SIHY	---	2-5	20-50
desert needlegrass	STSP3	2-5	---	---
needleandthread	STCO4	---	5-15	---
onion	ALLIU	---	---	1-3
specklepod loco milkvetch	ASLE8	---	---	2-5
Lahontan sagebrush	ARTEM	30-35	---	---
Nevada ephedra	EPNE	---	2-5	---
Wyoming big sagebrush	ARTRW	---	20-30	1-10
littleleaf horsebrush	TEGL	---	---	2-5
low sagebrush	ARAR8	---	---	5-15
spiny hopsage	GRSP	2-5	10-25	2-5
winterfat	EULA5	---	2-5	---
Range site number		027XY079NV	027XY008NV	026XY027NV
Potential production (lb/acre):				
Favorable years		500	700	400
Normal years		350	500	300
Unfavorable years		200	300	200

## 1160--SOJUR-SINGATSE ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SOJUR	SINGATSE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-25	15-25	---	15-30	15-25	15-25
Sandberg bluegrass	POSE	---	---	---	2-15	---	---
bottlebrush squirreltail	SIHY	---	---	---	2-8	---	---
desert needlegrass	STSP3	2-10	2-10	---	---	2-10	2-10
Nevada ophedra	EPNE	2-5	2-5	---	---	2-5	2-5
bud sagebrush	ARSP5	2-8	2-8	---	15-25	2-8	2-8
shadscale	ATCO	30-40	30-40	---	20-35	30-40	30-40
winterfat	EULA5	2-8	2-8	---	5-10	2-8	2-8
Range site number		027XY027NV	027XY027NV	none	027XY013NV	027XY027NV	027XY027NV
Potential production (lb/acre):							
Favorable years		200	200		600	200	200
Normal years		100	100		450	100	100
Unfavorable years		50	50		250	50	50



## 1171--TOCAN-ABOTEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		TOCAN	ABOTEN	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	10-20	10-20	10-20	5-10
Sandberg bluegrass	POSE	5-10	5-10	5-10	---
bottlebrush squirreltail	SIEY	2-8	2-8	2-8	5-10
Bailey greasewood	SAVE	15-30	15-30	15-30	---
Nevada sphedra	EPNE	---	---	---	5-10
bud sagebrush	ARSP5	2-8	2-8	2-8	---
burrobrush	HYMEN3	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	10-20
shadscale	ATCO	15-30	15-30	15-30	---
spiny hopsage	GRSP	---	---	---	10-20
Range site number		027XY018NV	027XY018NV	027XY018NV	027XY022NV
Potential production (lb/acre):					
Favorable years		400	400	400	400
Normal years		250	250	250	200
Unfavorable years		100	100	100	50

## 1180--JERVAL-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		JERVAL	TROCKEN	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	15-30	25-45	15-25	5-10
Sandberg bluegrass	POSE	2-15	---	---	---
bottlebrush squirreltail	SIHY	2-8	---	---	5-10
desert needlegrass	STSP3	---	2-8	2-10	---
Bailey greasewood	SAVEB	---	20-30	---	---
Nevada ephedra	EPNE	---	---	2-5	5-10
bud sagebrush	ARSP5	15-25	2-8	2-8	---
burrobrush	HYMEN3	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	10-20
shadscale	ATCO	20-35	5-15	30-40	---
spiny hopsage	GRSP	---	---	---	10-20
winterfat	EULA5	5-10	2-8	2-8	---

Range site number	027XY013NV	027XY050NV	027XY027NV	027XY022NV
Potential production (lb/acre):				
Favorable years	600	500	200	400
Normal years	450	350	100	200
Unfavorable years	250	200	50	50

## 1200--ARCLAY VERY GRAVELLY COARSE SANDY LOAM, 4 TO 15 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		ARCLAY	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	---	5-15	---
Sandberg bluegrass	POSE	2-8	2-8	---
Thurber needlegrass	STTE2	20-35	25-35	---
desert needlegrass	STSP3	2-5	---	---
Lahontan sagebrush	ARTEM	30-35	---	---
Nevada ephedra	EPNE	---	2-5	---
Wyoming big sagebrush	ARTEW	---	25-35	---
spiny hopsage	GRSP	2-5	2-8	---
Range site number		027XY079NV	027XY007NV	none
Potential production (lb/acre):				
Favorable years		500	700	
Normal years		350	500	
Unfavorable years		200	300	

## 1210--BIGA-GRANSEAW-LABKEY ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BIGA	GRANSEAW	LABKEY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	25-45	25-45	10-20	40-50	5-10	50-70
Sandberg bluegrass	POSE	---	---	5-10	---	---	---
bottlebrush squirreltail	SIHY	---	---	2-8	2-5	5-10	---
desert needlegrass	STSP3	2-8	2-8	---	---	---	---
needleandthread	STCO4	---	---	---	5-15	---	5-15
globemallow	SPHAE	---	---	---	2-5	---	---
Bailey greasewood	SAVEB	20-30	20-30	15-30	---	---	---
Nevada dalea	PSPO	---	---	---	---	---	0-5
Nevada sphedra	EPNE	---	---	---	---	5-10	---
bud sagebrush	ARSP5	2-8	2-8	2-8	5-15	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	10-20
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	5-15	5-15	15-30	---	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	2-5
winterfat	EULA5	2-8	2-8	---	25-30	---	2-8

Range site number	027XY050NV	027XY050NV	027XY018NV	027XY014NV	027XY022NV	027XY009NV
Potential production (lb/acre):						
Favorable years	500	500	400	700	400	700
Normal years	350	350	250	500	200	450
Unfavorable years	200	200	100	350	50	250

## 1211--BIGA GRAVELLY COARSE SANDY LOAM, 2 TO 8 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BIGA	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	25-45	5-10	15-30	40-50
Sandberg bluegrass	POSE	5-10	---	---	2-15	---
bottlebrush squirreltail	SIHY	2-8	---	5-10	2-8	2-5
desert needlegrass	STSP3	---	2-8	---	---	---
needleandthread	STCO4	---	---	---	---	5-15
globemallow	SPHAE	---	---	---	---	2-5
Bailey greasewood	SAVEB	15-30	20-30	---	---	---
Nevada ephedra	EPNE	---	---	5-10	---	---
bud sagebrush	ARSP5	2-8	2-8	---	15-25	5-15
burrobrush	HYMEN3	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	---	---
shadscale	ATCO	15-30	5-15	---	20-35	---
spiny hopsage	GRSP	---	---	10-20	---	---
winterfat	EULA5	---	2-8	---	5-10	25-30
Range site number		027XY018NV	027XY050NV	027XY022NV	027XY013NV	027XY014NV
Potential production (lb/acre):						
Favorable years		400	500	400	600	700
Normal years		250	350	200	450	500
Unfavorable years		100	200	50	250	350

## 1212--BIGA-ROIC-LABKEY ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BIGA	ROIC	LABKEY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	15-25	25-45	10-20	15-30	5-10
Sandberg bluegrass	POSE	5-10	---	---	5-10	2-15	---
bottlebrush squirreltail	SIHY	2-8	---	---	2-8	2-8	5-10
desert needlegrass	STSP3	---	2-10	2-8	---	---	---
Bailey greasewood	SAVEB	15-30	---	20-30	15-30	---	---
Nevada ephedra	EPNE	---	2-5	---	---	---	5-10
bud sagebrush	ARSP5	2-8	2-8	2-8	2-8	15-25	---
burrobrush	HYMEN3	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-20
shadscale	ATCO	15-30	30-40	5-15	15-30	20-35	---
spiny hopsage	GRSP	---	---	---	---	---	10-20
winterfat	EULA5	---	2-8	2-8	---	5-10	---

Range site number	027XY018NV	027XY027NV	027XY050NV	027XY018NV	027XY013NV	027XY022NV
Potential production (lb/acre):						
Favorable years	400	200	500	400	600	400
Normal years	250	100	350	250	450	200
Unfavorable years	100	50	200	100	250	50

## 1220--LABKEY GRAVELLY SANDY LOAM, 2 TO 8 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		LABKEY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	25-45	50-70	25-45	5-10
bottlebrush squirreltail	SIHY	---	---	---	5-10
desert needlegrass	STSP3	2-8	---	2-8	---
needleandthread	STCO4	---	5-15	---	---
Bailey greasewood	SAVEB	20-30	---	20-30	---
Nevada dalea	PSPO	---	0-5	---	---
Nevada ephedra	EPNE	---	---	---	5-10
bud sagebrush	ARSP5	2-8	---	2-8	---
burrobrush	HYMEN3	---	---	---	5-10
fourwing saltbush	ATCA2	---	10-20	---	5-10
littleleaf horsebrush	TEGL	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	10-20
shadscale	ATCO	5-15	---	5-15	---
spiny hopsage	GRSP	---	2-5	---	10-20
winterfat	EULAS	2-8	2-8	2-8	---
Range site number		027XY050NV	027XY009NV	027XY050NV	027XY022NV
Potential production (lb/acre):					
Favorable years		500	700	500	400
Normal years		350	450	350	200
Unfavorable years		200	250	200	50

## 1230--GENEGRAF-BLUEWING-DORPER ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		GENEGRAF	BLUEWING	DORPER	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	25-45	25-45	50-70	5-10	25-45
Sandberg bluegrass	POSE	5-10	---	---	---	---	---
bottlebrush squirreltail	SIHY	2-8	---	---	---	5-10	---
desert needlegrass	STSP3	---	2-8	2-8	---	---	2-8
needleandthread	STCO4	---	---	---	5-15	---	---
Bailey greasewood	SAVEB	15-30	20-30	20-30	---	---	20-30
Nevada dalea	PSPO	---	---	---	0-5	---	---
Nevada ephedra	EPNE	---	---	---	---	5-10	---
bud sagebrush	AKSP5	2-8	2-8	2-8	---	---	2-8
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	10-20	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	15-30	5-15	5-15	---	---	5-15
spiny hopsage	GRSP	---	---	---	2-5	10-20	---
winterfat	EULA5	---	2-8	2-8	2-8	---	2-8

Range site number	027XY018NV	027XY050NV	027XY050NV	027XY009NV	027XY022NV	027XY050NV
Potential production (lb/acre):						
Favorable years	400	500	500	700	400	500
Normal years	250	350	350	450	200	350
Unfavorable years	100	200	200	250	50	200



## 1231--GENEGRAF-TROCKEN-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		GENEGRAF	TROCKEN	BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	10-20	15-30	5-10	25-45	10-20	15-30
Sandberg bluegrass	POSE	5-10	2-15	---	---	5-10	2-15
bottlebrush squirreltail	SIEY	2-8	2-8	5-10	---	2-8	2-8
desert needlegrass	STSP3	---	---	---	2-8	---	---
Bailey greasewood	SAVEB	15-30	---	---	20-30	15-30	---
Nevada ephedra	EPNE	---	---	5-10	---	---	---
bud sagebrush	ARSP5	2-8	15-25	---	2-8	2-8	15-25
burrobrush	HYMEN3	---	---	5-10	---	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	---	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	---	---	---
shadscale	ATCO	15-30	20-35	---	5-15	15-30	20-35
spiny hopsage	GRSP	---	---	10-20	---	---	---
winterfat	EULA5	---	5-10	---	2-8	---	5-10
Range site number		027XY018NV	027XY013NV	027XY022NV	027XY050NV	027XY018NV	027XY013NV
Potential production (lb/acre):							
Favorable years		400	600	400	500	400	600
Normal years		250	450	200	350	250	450
Unfavorable years		100	250	50	200	100	250

## 1232--GENEGRAF-REDNIK-TROCKEN ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		GENEGRAF	REDNIK	TROCKEN	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	10-20	10-20	25-45	5-10	15-30
Sandberg bluegrass	POSE	5-10	5-10	---	---	2-15
bottlebrush squirreltail	SIHY	2-8	2-8	---	5-10	2-8
desert needlegrass	STSP3	---	---	2-8	---	---
Bailey greasewood	SAVEB	15-30	15-30	20-30	---	---
Nevada spheg	EPNE	---	---	---	5-10	---
bud sagebrush	ARSP5	2-8	2-8	2-8	---	15-25
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
shadscale	ATCO	15-30	15-30	5-15	---	20-35
spiny hopsage	GRSP	---	---	---	10-20	---
winterfat	EULA5	---	---	2-8	---	5-10

Range site number	027XY018NV	027XY018NV	027XY050NV	027XY022NV	027XY013NV
Potential production (lb/acre):					
Favorable years	400	400	500	400	600
Normal years	250	250	350	200	450
Unfavorable years	100	100	200	50	250

## 1233--GENEGRAF-BUCKAROO-BLUEWING ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		GENEGRAF	BUCKAROO	BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	10-20	5-10	25-45	25-45	10-20
Sandberg bluegrass	POSE	5-10	5-10	---	---	---	5-10
bottlebrush squirreltail	SIHY	2-8	2-8	5-10	---	---	2-8
desert needlegrass	STSP3	---	---	---	2-8	2-8	---
Bailey greasewood	SAVEB	15-30	15-30	---	20-30	20-30	15-30
Nevada ephedra	EPNE	---	---	5-10	---	---	---
bud sagebrush	ARSP5	2-8	2-8	---	2-8	2-8	2-8
burrobrush	HYMEN3	---	---	5-10	---	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	---	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	---	---	---
shadscale	ATCO	15-30	15-30	---	5-15	5-15	15-30
spiny hopsage	GRSP	---	---	10-20	---	---	---
winterfat	EULA5	---	---	---	2-8	2-8	---

Range site number	027XY018NV	027XY018NV	027XY022NV	027XY050NV	027XY050NV	027XY018NV
Potential production (lb/acre):						
Favorable years	400	400	400	500	500	400
Normal years	250	250	200	350	350	250
Unfavorable years	100	100	50	200	200	100

## 1280--SOAR-ARCLAY ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SOAR	ARCLAY	SOAR	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	---	---	---	2-10	5-15	5-15	15-25
Sandberg bluegrass	POSE	---	2-8	---	---	2-8	---	---
Thurber needlegrass	STTH2	---	20-35	---	40-50	25-35	---	---
basin wildrye	ELCI2	---	---	---	---	---	---	5-15
desert needlegrass	STSP3	50-60	2-5	50-60	---	---	40-60	---
globemallow	SPHAE	---	---	---	---	---	1-3	---
Anderson wolfberry	LYAN	---	---	---	---	---	2-5	---
Lahontan sagebrush	ARTEM	25-30	30-35	25-30	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	2-5	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	---	25-35	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	---	20-30
big sagebrush	ARTR2	---	---	---	15-25	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---	---
rabbitbrush	CHRY9	---	---	---	---	---	---	2-5
shadscale	ATCO	---	---	---	---	---	20-35	---
spiny hopsage	GRSP	2-8	2-5	2-8	2-5	2-8	2-8	10-20
winterfat	EULA5	2-8	---	2-8	---	---	---	---

Range site number	027XY068NV	027XY079NV	027XY068NV	027XY072NV	027XY007NV	027XY017NV	027XY029NV
Potential production (lb/acre):							
Favorable years	900	500	900	800	700	400	800
Normal years	600	350	600	600	500	200	500
Unfavorable years	350	200	350	400	300	100	300

## 1290--SLOCAVE-VIUM ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		SLOCAVE	VIUM	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	5-15	15-25	5-15	5-10
bottlebrush squirreltail	SIHY	---	---	2-5	5-10
desert needlegrass	STSP3	40-60	2-10	2-8	---
globemallow	SPHA2	1-3	---	---	---
Anderson wolfberry	LYAN	2-5	---	---	---
Bailey greasewood	SAVEB	---	---	15-30	---
Nevada ephedra	EPNE	2-5	2-5	---	5-10
bud sagebrush	ARSP5	---	2-8	2-8	---
burrobrush	HYMEN3	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	10-20
shadscale	ATCO	20-35	30-40	15-35	---
spiny hopsage	GRSP	2-8	---	---	10-20
winterfat	EULA5	---	2-8	---	---
Range site number		027XY017NV	027XY027NV	027XY019NV	027XY022NV
Potential production (lb/acre):					
Favorable years		400	200	300	400
Normal years		200	100	175	200
Unfavorable years		100	50	50	50

## 1300--LOVELOCK SILT LOAM, DRAINED

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		LOVELOCK	Inclusion 1	Inclusion 2	Inclusion 3
Baltic rush	JUBA	5-10	---	---	---
Indian ricegrass	ORHY	---	---	20-30	---
alkali bulrush	SCRO	---	---	---	10-15
alkali sacaton	SPAI	30-45	---	---	---
basin wildrye	ELCI2	2-5	---	---	---
cattail	TYPHA	---	---	---	20-30
creeping spikerush	ELPA3	---	---	---	15-25
inland saltgrass	DISPS2	10-15	2-10	2-5	---
rush	JUNCU	---	---	---	5-10
sedge	CAREX	---	---	---	5-10
western wheatgrass	AGSM	2-5	---	---	---
black greasewood	SAVE4	---	60-70	30-50	---
fourwing saltbush	ATCA2	---	---	2-5	---
seepweed	SUAED	---	2-8	---	---
shadscale	ATCO	---	2-10	2-5	---

Range site number	027XY005NV	027XY025NV	027XY016NV	027XY001NV
Potential production (lb/acre):				
Favorable years	3000	500	500	4000
Normal years	2200	350	300	2800
Unfavorable years	1000	200	150	2000

## 1301--LOVELOCK SILT LOAM, RARELY FLOODED

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		LOVELOCK	Inclusion 1	Inclusion 2
Baltic rush	JUBA	5-10	---	---
Indian ricegrass	ORHY	---	20-30	---
alkali sacaton	SPAI	30-45	---	---
basin wildrye	ELCI2	2-5	---	---
inland saltgrass	DISPS2	10-15	2-5	2-10
western wheatgrass	AGSM	2-5	---	---
black greasewood	SAVE4	---	30-50	60-70
fourwing saltbush	ATCA2	---	2-5	---
seepweed	SUAED	---	---	2-8
shadscale	ATCO	---	2-5	2-10
Range site number		027XY005NV	027XY016NV	027XY025NV
Potential production (lb/acre):				
Favorable years		3000	500	500
Normal years		2200	300	350
Unfavorable years		1000	150	200

## 1320--GARDELLA GRAVELLY SILT LOAM, 0 TO 2 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		GARDELLA	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	---	20-30	---	---
inland saltgrass	DISPS2	2-10	2-5	2-10	---
black greasewood	SAVE4	60-70	30-50	60-70	---
fourwing saltbush	ATCA2	---	2-5	---	---
seepweed	SUAED	2-8	---	2-8	---
shadscale	ATCO	2-10	2-5	2-10	---
Range site number		027XY025NV	027XY016NV	027XY025NV	none
Potential production (lb/acre):					
Favorable years		500	500	500	
Normal years		350	300	350	
Unfavorable years		200	150	200	



## 1330--PARRAN SILTY CLAY, 0 TO 2 PERCENT SLOPES

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		PARRAN	Inclusion 1	Inclusion 2	Inclusion 3
Baltic rush	JUBA	---	---	5-10	---
Indian ricegrass	ORRY	---	20-30	---	---
alkali sacaton	SPAI	---	---	30-45	---
basin wildrye	ELCI2	---	---	2-5	---
inland saltgrass	DISPS2	2-10	2-5	10-15	---
western wheatgrass	AGSM	---	---	2-5	---
black greasewood	SAVE4	60-70	30-50	---	---
fourwing saltbush	ATCA2	---	2-5	---	---
seepweed	SUAED	2-8	---	---	---
shadscale	ATCO	2-10	2-5	---	---
Range site number		027XY025NV	027XY016NV	027XY005NV	none
Potential production (lb/acre):					
Favorable years		500	500	3000	
Normal years		350	300	2200	
Unfavorable years		200	150	1000	

## 1331--PARRAN-HAWSLEY COMPLEX

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		PARRAN	HAWSLEY	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Baltic rush	JUBA	---	---	---	---	---	5-10
Indian ricegrass	ORHY	---	20-30	20-30	---	---	---
alkali sacaton	SPAI	---	---	---	---	---	30-45
basin wildrye	ELCI2	---	---	---	---	---	2-5
inland saltgrass	DISPS2	2-10	2-5	2-5	---	---	10-15
western wheatgrass	AGSM	---	---	---	---	---	2-5
black greasewood	SAVE4	60-70	30-50	30-50	---	---	---
fourwing saltbush	ATCA2	---	2-5	2-5	---	---	---
seepweed	SUAED	2-8	---	---	---	---	---
shadscale	ATCO	2-10	2-5	2-5	---	---	---
Range site number		027XY025NV	027XY016NV	027XY016NV	none	none	027XY005NV
Potential production (lb/acre):							
Favorable years		500	500	500			3000
Normal years		350	300	300			2200
Unfavorable years		200	150	150			1000

## 1332--PARRAN-UMBERLAND ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		PARRAN	UMBERLAND	Inclusion 1
alkali bluegrass	POJU	---	30-50	---
inland saltgrass	DISPS2	2-10	5-10	---
rush	JUNCU	---	25-35	---
sedge	CAREX	---	10-15	---
glasswort	SALIC	---	2-5	---
black greasewood	SAVE4	60-70	---	---
seepweed	SUAED	2-8	---	---
shadscale	ATCO	2-10	---	---
Range site number		027XY025NV	027XY069NV	none
Potential production (lb/acre):				
Favorable years		500	3000	
Normal years		350	2500	
Unfavorable years		200	2000	

## 1340--INMO ASSOCIATION

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		INMO	INMO	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	25-45	5-10	10-20	10-20
Sandberg bluegrass	POSE	---	---	5-10	5-10
bottlebrush squirreltail	SIHY	---	---	2-8	2-8
desert needlegrass	STSP3	2-8	---	---	---
Bailey greasewood	SAVEB	20-30	2-10	15-30	15-30
Cooper wolfberry	LYCO2	---	2-5	---	---
Nevada ephedra	EFNE	---	2-5	---	---
bud sagebrush	ARSP5	2-8	---	2-8	2-8
burrobrush	HYMEN3	---	5-10	---	---
fourwing saltbush	ATCA2	---	5-15	---	---
littleleaf horsebrush	TEGL	---	5-10	---	---
rubber rabbitbrush	CHNA2	---	10-25	---	---
shadscale	ATCO	5-15	---	15-30	15-30
winterfat	EULA5	2-8	---	---	---
Range site number		027XY050NV	029XY041NV	027XY018NV	027XY018NV
Potential production (lb/acre):					
Favorable years		500	500	400	400
Normal years		350	300	250	250
Unfavorable years		200	100	100	100

## W--WATER

[Absence of an entry indicates that the named plant is not a key species in the potential native plant community.]

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions
		Soil name or Inclusion number--
		WATER

Range site number

none

Potential production (lb/acre):

Favorable years

Normal years

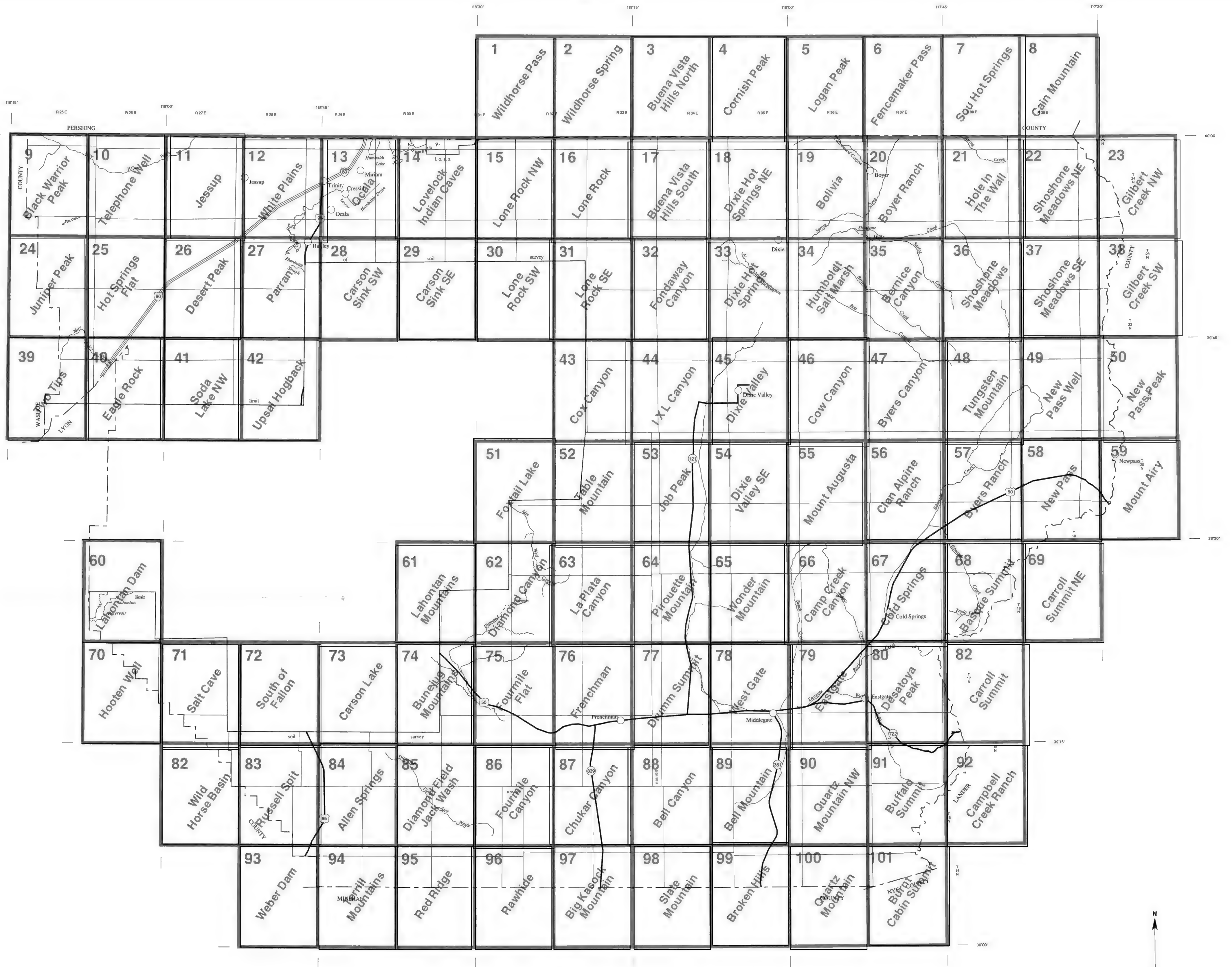
Unfavorable years

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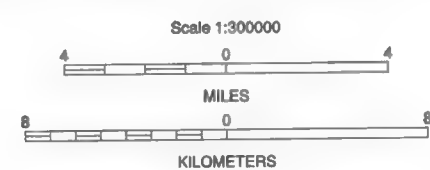
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# INDEX TO MAP SHEETS CHURCHILL COUNTY AREA, NEVADA, PARTS OF CHURCHILL AND LYON COUNTIES



SECTIONALIZED TOWNSHIP					
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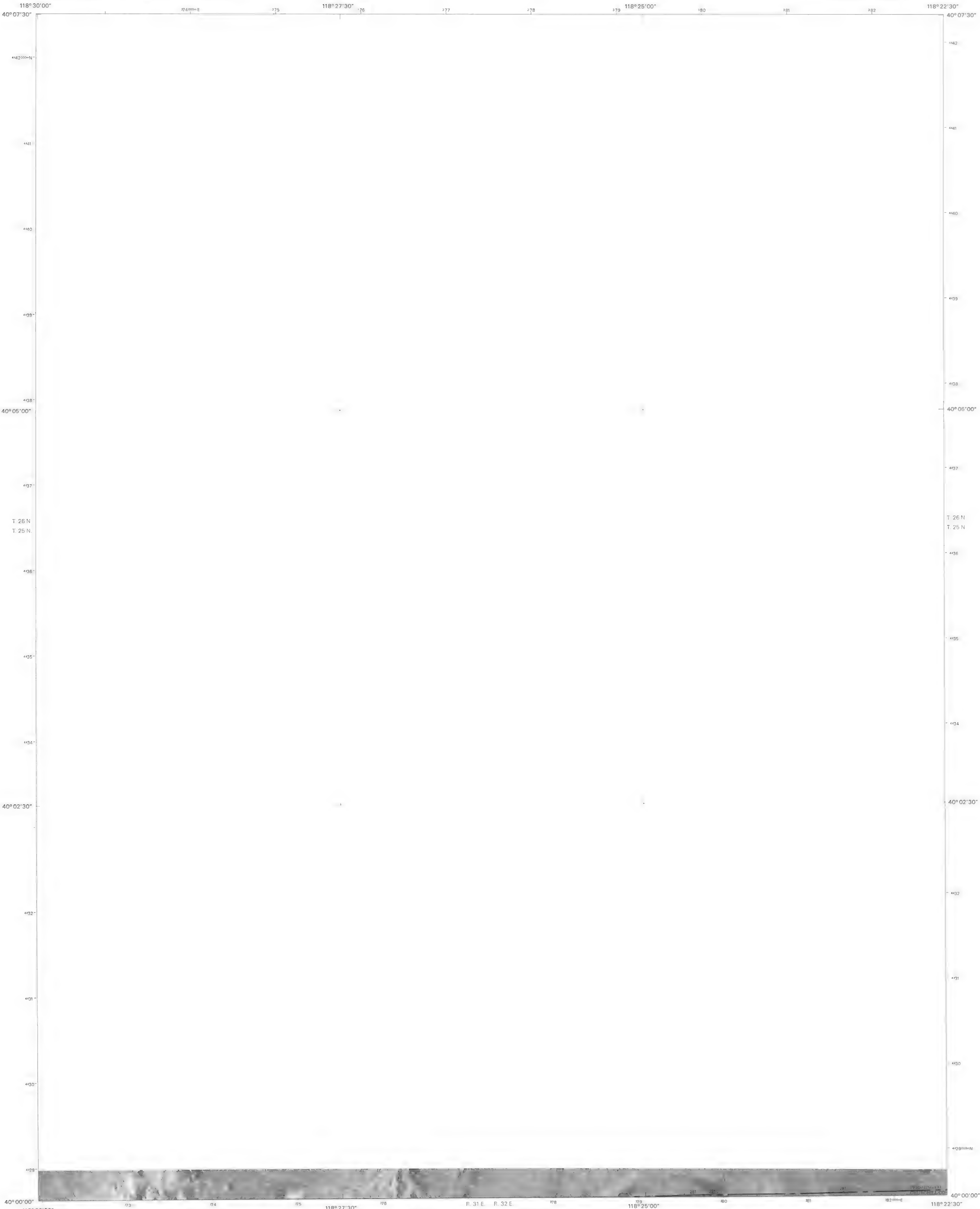
SOIL LEGEND

Map symbols consist of 3 or 4 numbers except for water. The symbols represent the kind of soils or miscellaneous areas.

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
100	Budihol-Chill-Rock outcrop association	322	Jung-Puett-Buffaran association	731	Hooplite-Old Camp-Singatse association
102	Budihol Minneha-Rock outcrop association	324	Jung-Clan Alpine-Colbar association	732	Hooplite-Old Camp-Puett association
110	Bimmer-Chill association	325	Jung-Old Camp-Clan Alpine association	733	Hooplite-Old Camp-Jung association
120	Nemico-Mirkwood-Rock outcrop association	330	Settlement-Louderback-Rustigate association	734	Hooplite-Theon-Puett association
130	Bedzee-Loomer-Bedwyr association	331	Settlement-Chuckles-Rustigate association	735	Hooplite-Old Camp-Duco association
140	Hawsley sand, 2 to 8 percent slopes	340	Slaw-Juva-Wholan association	740	Packer-Layview-Hapgood association
141	Hawsley-Isolde association	341	Slaw-Chuckles association	741	Packer-Hapgood-Rock outcrop association
142	Hawsley-Appian-Ruhe association	342	Slaw-Mazuma-Hessing association	760	Burnborough-Cleavage-Welch association
143	Hawsley-Gamgee association	343	Slaw-Trocken-Chuckles association	761	Burnborough-Cleavage-Reluctant association
144	Hawsley-Theon-Pirouette association	344	Slaw-Ragtown association	770	Chilper-Bundorf-Trocken association
146	Hawsley-Juva association	350	Ricert-Pineval association	772	Chilper-Trocken-Jerval association
147	Hawsley-Celeton-Bluewing association	351	Ricert-Chilper-Pineval association	790	Jacratz-Naylan association
150	Buckaroo-Bluewing association	352	Ricert-Desatoya-Pineval association	800	Bedwyr-Celeton association
152	Buckaroo-Watoopah-Rezave association	353	Ricert-Trocken-Pineval association	802	Bedwyr-Bedzee-Jobpeak association
153	Buckaroo-Rednik-Bluewing association	358	Ricert-Desatoya-Trocken association	820	Aboten-Inmo-Bluewing association
154	Buckaroo-Rednik-Genegraf association	359	Ricert-Celeton-Trocken association	830	Corral-Celeton-Bedwyr association
155	Buckaroo-Genegraf-Pineval association	360	Ricert-Trocken-Rebel association	840	Belate-Roca-Cleavage association
158	Buckaroo-Celeton-Wholan association	370	Duco-Clan Alpine-Jung association	850	Walti-Roca-Belate association
159	Buckaroo-Genegraf association	371	Duco-Clan Alpine-Old Camp association	860	Teguro-Colbar-Cleavage association
160	Singatse-Rock outcrop association	373	Duco-Itca-Puett association	870	Chill-Cleavage association
161	Singatse-Unpnes-Rock outcrop association	380	Itca-Clan Alpine-Rock outcrop association	880	Copperd-Singatse-Findout association
162	Singatse-Theon-Rezave association	381	Itca-Reluctant-Walti association	900	Playas
164	Singatse-Loomer association	390	Defler-Pineval association	901	Dune land-Isolde association
170	Isolde-Dune land-Pirouette association	391	Defler-Trocken association	902	Badland
171	Isolde-Parran-Appian association	400	Chuckles-Playas complex	903	Badland-Rebel-Yody association
172	Isolde-Pirouette-Hawsley association	401	Chuckles-Bango association	910	Theriot-Findout-Rock outcrop association
173	Isolde fine sand, slightly saline, 2 to 15 percent slopes	402	Chuckles-Playas-Slaw association	930	Layview-Packer-Hapgood association
174	Isolde-Ragtown association	404	Chuckles-Settlement-Rebel association	940	Old Camp-Rubble land association
180	Bluewing-Inmo association	410	Buffaran-Desatoya association	960	Kolda-Umberland association
181	Bluewing very gravelly loamy sand, 2 to 8 percent slopes	411	Buffaran-Rebel-Puett association	970	Jobpeak-Teguro-Rock outcrop association
184	Bluewing-Pineval association	420	Trocken-Hessing-Dun Glen association	980	Madeline-Millerlux association
185	Bluewing-Toulon-Rock outcrop association	422	Trocken-Hessing-Pineval association	990	Millerlux-Ninemile-Madeline association
186	Bluewing-Hawsley association	423	Trocken-Bluewing association	1000	Stumble loamy sand, 2 to 4 percent slopes
190	Theon-Old Camp association	425	Trocken-Hessing-Defler association	1010	Downeyville-Stewval Blacktop association
191	Theon-Singatse-Rock outcrop association	430	Kram-Altella-Rock outcrop association	1011	Downeyville-Blacktop association
192	Theon very gravelly sandy loam, 8 to 30 percent slopes	432	Kram-Findout-Rock outcrop association	1012	Downeyville, moist-Downeyville-Blacktop association
193	Theon-Mirkwood-Rock outcrop association	433	Kram-Hopeka-Rock outcrop association	1013	Downeyville-Gabbvally association
194	Theon-Hooplite-Singatse association	440	Ravenswood Itca-Walti association	1020	Unsel-Annaw-Izo association
199	Theon-Olac-Singatse association	450	Wholan-Defler association	1023	Unsel-Pineval association
200	Pirouette-Osobb-Rock outcrop association	460	Juva-Wholan-Stumble association	1024	Unsel-Desatoya-Roic association
201	Pirouette-Osobb-Celeton association	470	Hessing-Wholan-Dun Glen association	1025	Unsel-Desatoya-Pineval association
203	Pirouette-Hawsley association	471	Hessing-Dun Glen-Bango association	1026	Unsel-Pineval-Defler association
204	Pirouette-Osobb-Isolde association	480	Yody-Buffaran-Pineval association	1027	Unsel-Roic-Annaw association
206	Pirouette-Osobb-Old Camp association	481	Yody-Ricert-Pineval association	1030	Goldyke-Blacktop-Koyen association
207	Pirouette-Rezave-Osobb association	484	Yody-Pineval association	1040	Terico-Annaw-Izo association
208	Pirouette-Theon-Rubble land association	491	Pineval-Rebel-Wholan association	1050	Ceejay-Olac-Rock outcrop association
210	Biddleman association	492	Pineval-Rebel association	1061	Olac-Theon-Pirouette association
211	Biddleman, eroded-Trocken-Biddleman association	494	Pineval-Buckaroo-Rebel association	1062	Olac-Old Camp-Ceejay association
213	Biddleman-Trocken association	500	Louderback-Rustigate-Isolde association	1071	Ganalian-Bluewing-Trocken association
214	Biddleman-Trocken-Ruhe association	511	Grumbien-Pickup association	1090	Umberland-Isolde association
215	Biddleman-Isolde association	520	Pineval-Bluewing-Inmo association	1100	Theon-Olac association
216	Biddleman-Bluewing-Trocken association	530	Cleaver-Trocken-Bluewing association	1101	Theon association, steep
220	Bango-Stumble association	532	Cleaver-Ricert-Barnmot association	1102	Theon association
221	Bango-Appian association	533	Cleaver-Buffaran association	1104	Theon-Roic-Singatse association
222	Bango-Playas-Chuckles association	535	Cleaver-Bundorf association	1120	Patna-Hawsley-Juva association
230	Unpnes-Budihol-Rock outcrop association	536	Cleaver-Rednik association	1121	Patna sand, 0 to 4 percent slopes
231	Unpnes-Budihol-Chill association	537	Cleaver Otomo association	1130	Malpais complex
232	Unpnes-Rock outcrop association	538	Cleaver-Genegraf-Roic association	1140	Roic-Biddleman-Hooten association
240	Watoopah-Genegraf-Buckaroo association	540	Douhde-Itca-Ravenswood association	1142	Roic-Mazuma-Celeton association
241	Watoopah-Buckaroo-Wholan association	551	Yerington loamy fine sand, 2 to 4 percent slopes	1143	Roic-Trocken-Celeton association
250	Rezave-Singatse-Rock outcrop association	560	Izod-Rock outcrop association	1144	Roic-Singatse-Celeton association
260	Appian-Playas association	572	Rawe-Malpais association	1145	Roic-Patna association
261	Appian loamy sand, 0 to 2 percent slopes	580	Welch loam, 2 to 8 percent slopes	1150	Phing-Buffaran association
262	Appian-Juva-Bango association	590	Rebel-Pineval-Yody association	1160	Sojur-Singatse association
270	Fubble-Nicanor association	591	Rebel loam, 0 to 2 percent slopes	1171	Tocan-Aboten association
280	Trocken-Chuckles association	592	Rebel-Wholan-Pineval association	1180	Jerval-Trocken association
281	Trocken-Ragtown association	600	Hooten-Bango-Isolde association	1200	Arclay very gravelly coarse sandy loam, 4 to 15 percent slopes
283	Trocken-Bluewing association	610	Barnmot-Bluewing-Badland association	1210	Biga-Granshaw-Labkey association
284	Trocken very gravelly sandy loam, 2 to 15 percent slopes	620	Findout-Unpnes-Singatse association	1211	Biga gravelly coarse sandy loam, 2 to 8 percent slopes
290	Huxley gravelly clay loam, 0 to 2 percent slopes	621	Findout-Izod-Rock outcrop association	1212	Biga-Roic-Labkey association
300	Old Camp-Colbar-Rock outcrop association, steep	622	Findout-Old Camp-Rock outcrop association	1220	Labkey gravelly sandy loam, 2 to 8 percent slopes
301	Old Camp-Mirkwood-Nemico association	640	Mazuma-Bango association	1230	Genegraf-Bluewing-Dorper association
302	Old Camp-Singatse-Rock outcrop association	643	Mazuma-Bluewing association	1231	Genegraf-Trocken-Bluewing association
304	Old Camp-Bombadil-Loomer association	644	Mazuma-Toulon-Chuckles association	1232	Genegraf-Rednik-Trocken association
305	Old Camp-Colbar-Rock outcrop association	645	Mazuma very fine sandy loam, 0 to 4 percent slopes	1233	Genegraf-Buckaroo-Bluewing association
307	Old Camp-Theon-Rock outcrop association	650	Labou-Rock outcrop complex	1280	Soar-Arclay association
308	Old Camp-Clan Alpine-Colbar association	660	Loomer-Duco association	1290	Siocave-Vium association
309	Old Camp-Pickup-Loomer association	662	Loomer-Bombadil-Old Camp association	1300	Lovelock silt loam, drained
310	Rednik-Trocken-Bluewing association	670	Celeton-Genegraf-Bedwyr association	1301	Lovelock silt loam, rarely flocced
311	Rednik-Trocken-Genegraf association	671	Celeton-Bedwyr-Watoopah association	1320	Gardella gravelly silt loam, 0 to 2 percent slopes
313	Rednik-Ricert-Trocken association	672	Celeton-Barnmot-Chilper association	1330	Parran silty clay, 0 to 2 percent slopes
315	Rednik-Genegraf-Barnmot association	680	Bombadil-Old Camp association	1331	Parran-Hawsley complex
316	Rednik association	691	Osobb-Singatse-Pirouette association	1332	Parran-Umberland association
317	Rednik-Cleaver-Trocken association	700	Clan Alpine-Itca-Old Camp association	1340	Inmo association
320	Jung-Old Camp-Rock outcrop association	710	Luning-Izo association	W	Water
321	Jung-Desatoya-Roca association	730	Hooplite-Theon-Old Camp association		

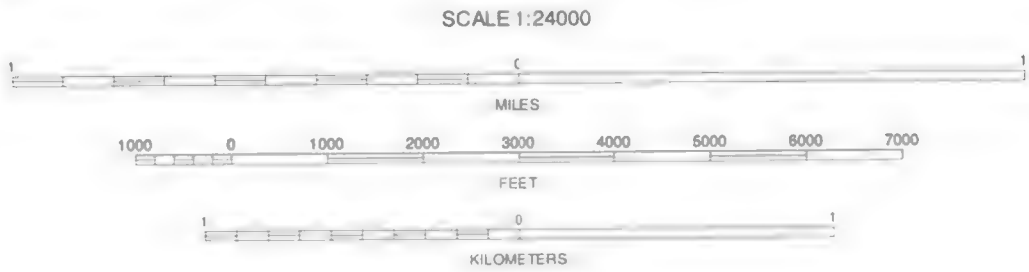
CONVENTIONAL AND SPECIAL  
SYMBOLS LEGEND

CULTURAL FEATURES	SPECIAL SYMBOLS FOR SOIL SURVEY
BOUNDARIES	SOIL DELINEATIONS AND SYMBOLS
County or parish	LANDFORM FEATURES
Limit of soil survey (label) and/or denied access areas	EXCAVATIONS
Field sheet matchline and neatline	PITS
	Gravel pit
ROAD EMBLEMS & DESIGNATIONS	Mine or quarry
Interstate	MISCELLANEOUS SURFACE FEATURES
Federal	Rock outcrop (includes sandstone and shale)
State	Stony spot
	Playas (1 to 5 acres)
WATER FEATURES	
DRAINAGE	
Perennial	
Intermittent	
MISCELLANEOUS WATER FEATURES	
Spring	



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

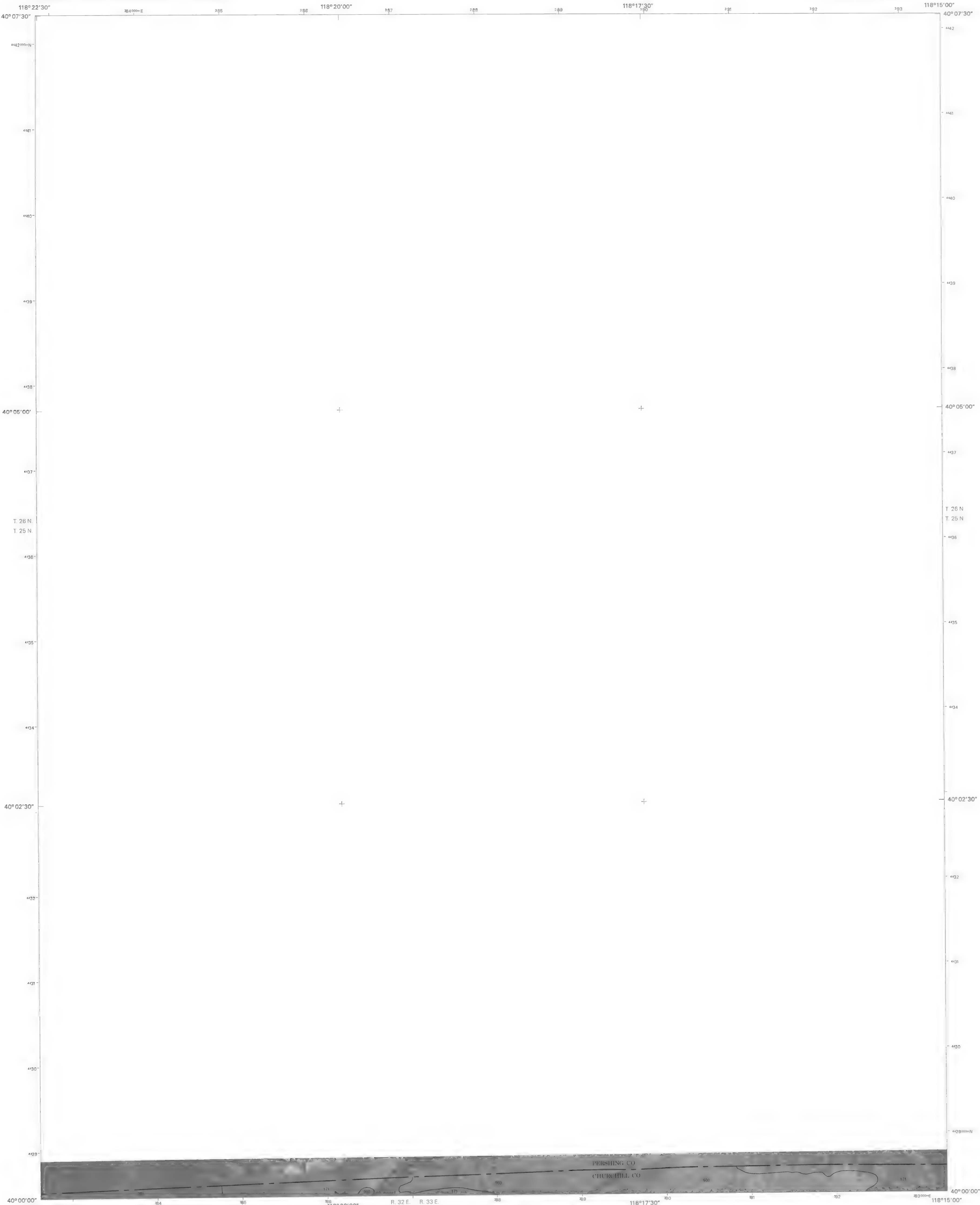


QUADRANGLE LOCATION

1	2	3	1 WEST OF LOVELOCK
			2 LOVELOCK
			3 COAL CANYON
4		5	4 GRANITE POINT
			5 WILDHORSE SPRING
			6 LOVELOCK INDIAN CAVES
6	7	8	7 LONE ROCK NW
			8 LONE ROCK

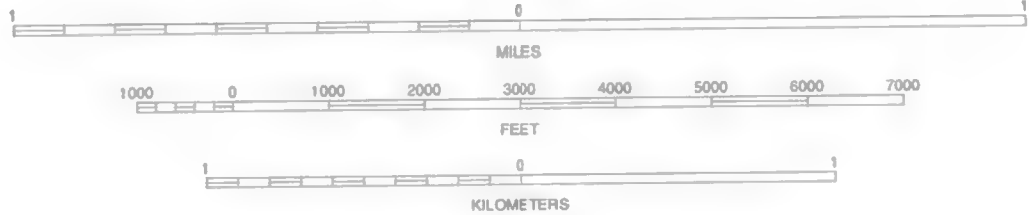
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WILDHORSE PASS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 1



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North American Datum of 1927 (NAD27) Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

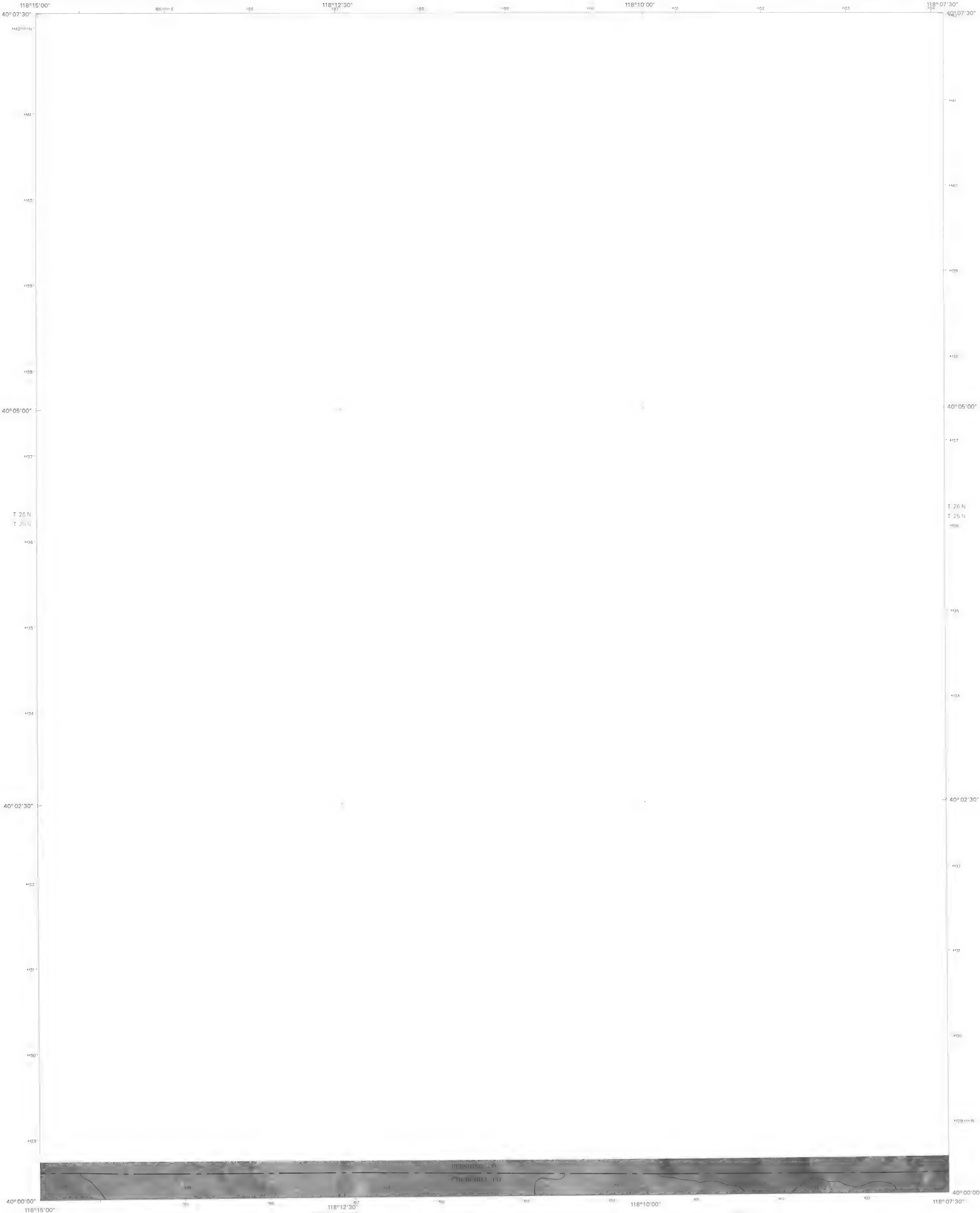


QUADRANGLE LOCATION

1	2	3	1 LOVELOCK
			2 COAL CANYON
			3 BUFFALO MOUNTAIN
			4 WILDHORSE PASS
4		5	5 BUENA VISTA HILLS NORTH
			6 LONE ROCK NW
			7 LONE ROCK
6	7	8	8 BUENA VISTA HILLS SOUTH

INDEX TO ADJOINING 7.5 MAPS

WILDHORSE SPRING, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 2



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter scale: Universal Transverse Mercator, zone 11.

NORTH

SCALE 1:24000

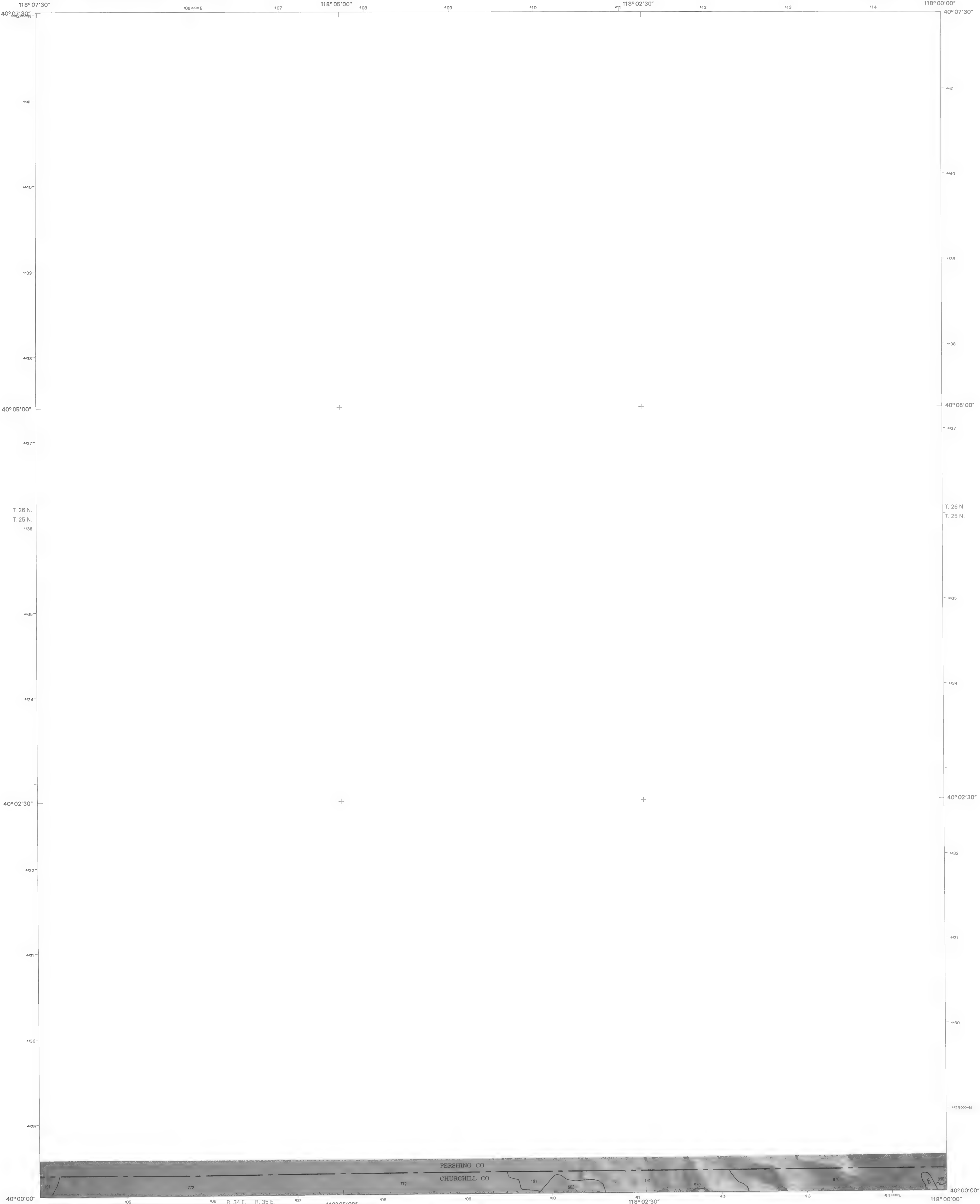


BUENA VISTA HILLS NORTH, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 3

QUADRANGLE LOCATION

1	2	3	1	COAL CANYON
			2	BUFFALO MOUNTAIN
			3	FISHER CANYON
			4	WILDHORSE SPRING
4		5	5	CORNISH PEAK
			6	LONE ROCK
			7	BUENA VISTA HILLS SOUTH
6	7	8	8	DIXIE HOT SPRINGS NE

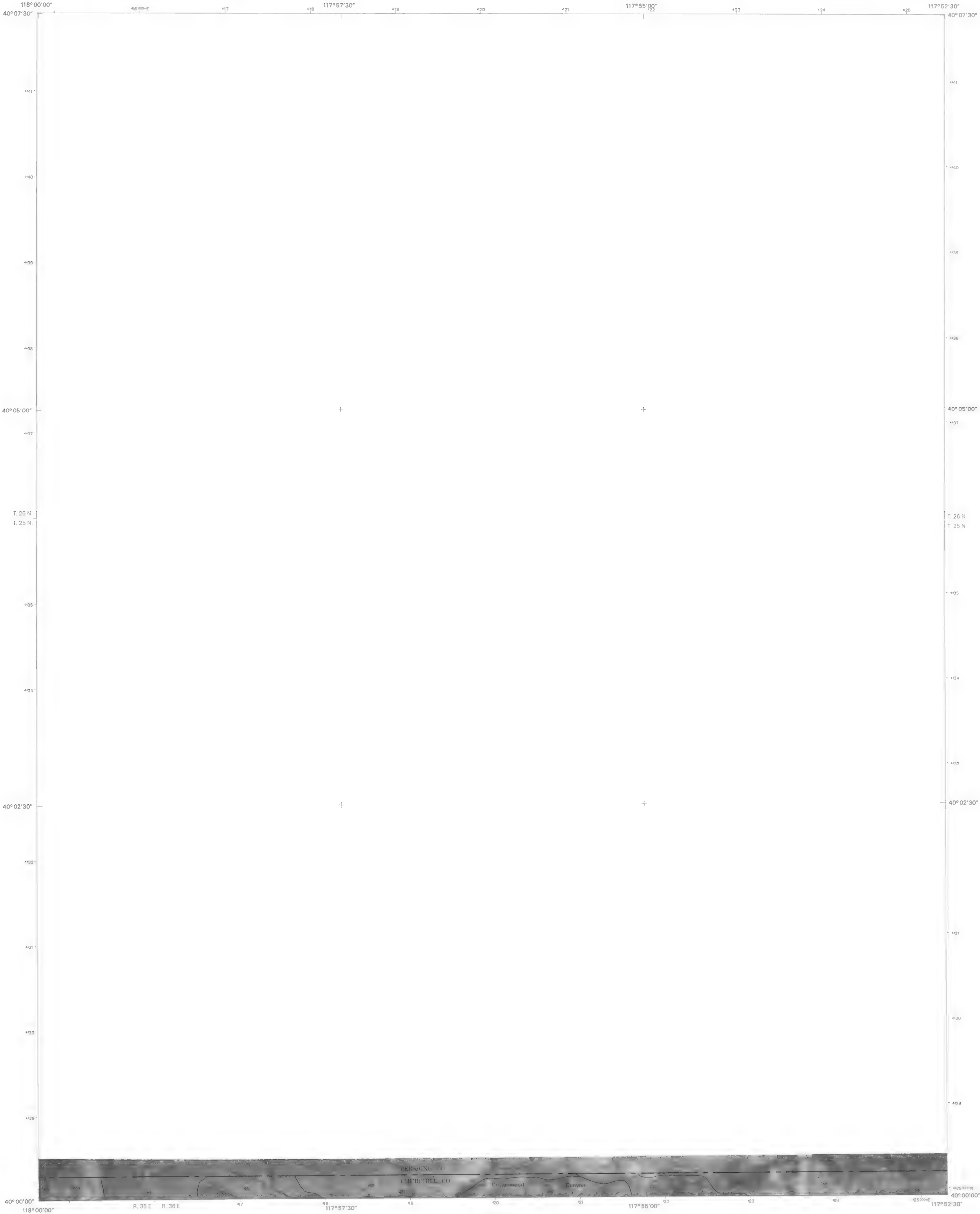
INDEX TO ADJOINING 7.5 MAPS



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH

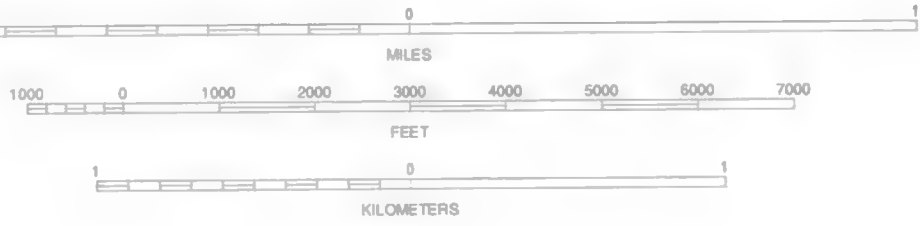


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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH

SCALE 1:24000

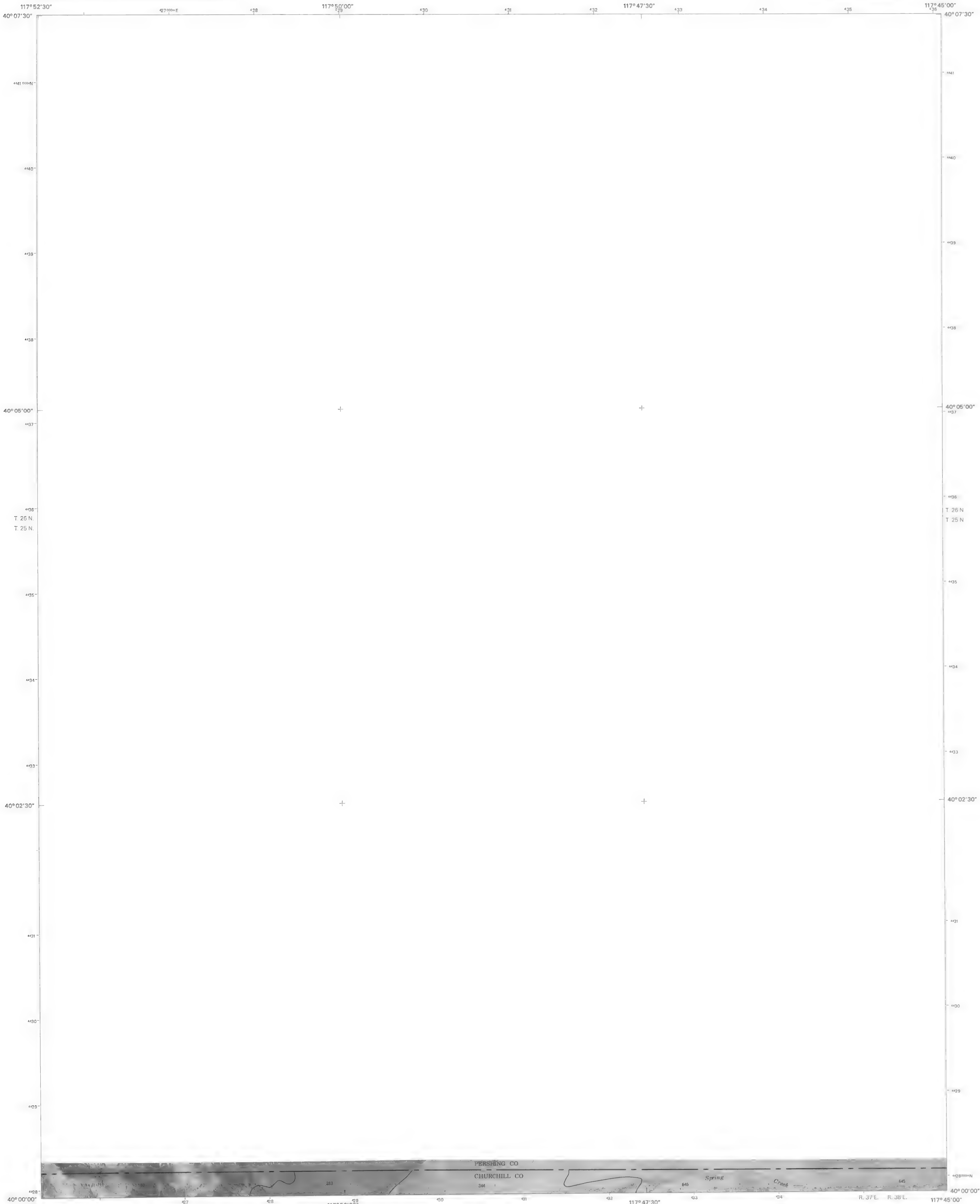


QUADRANGLE LOCATION

1	2	3	1 FISHER CANYON
			2 WEST OF MCKINNEY PASS
			3 MCKINNEY PASS
4		5	4 CORNISH PEAK
			5 FENCEWAKER PASS
			6 DIXIE HOT SPRINGS NE
6	7	8	7 BOLIVA
			8 BOYER RANCH

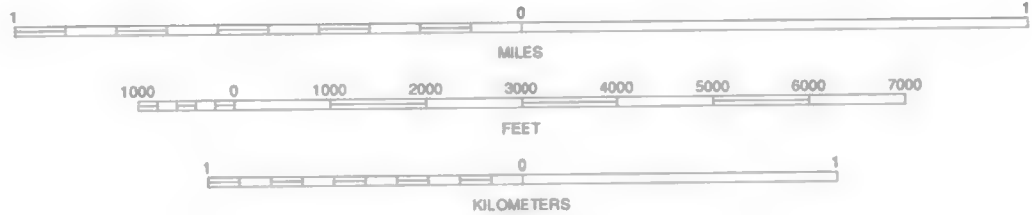
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LOGAN PEAK, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 5



This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

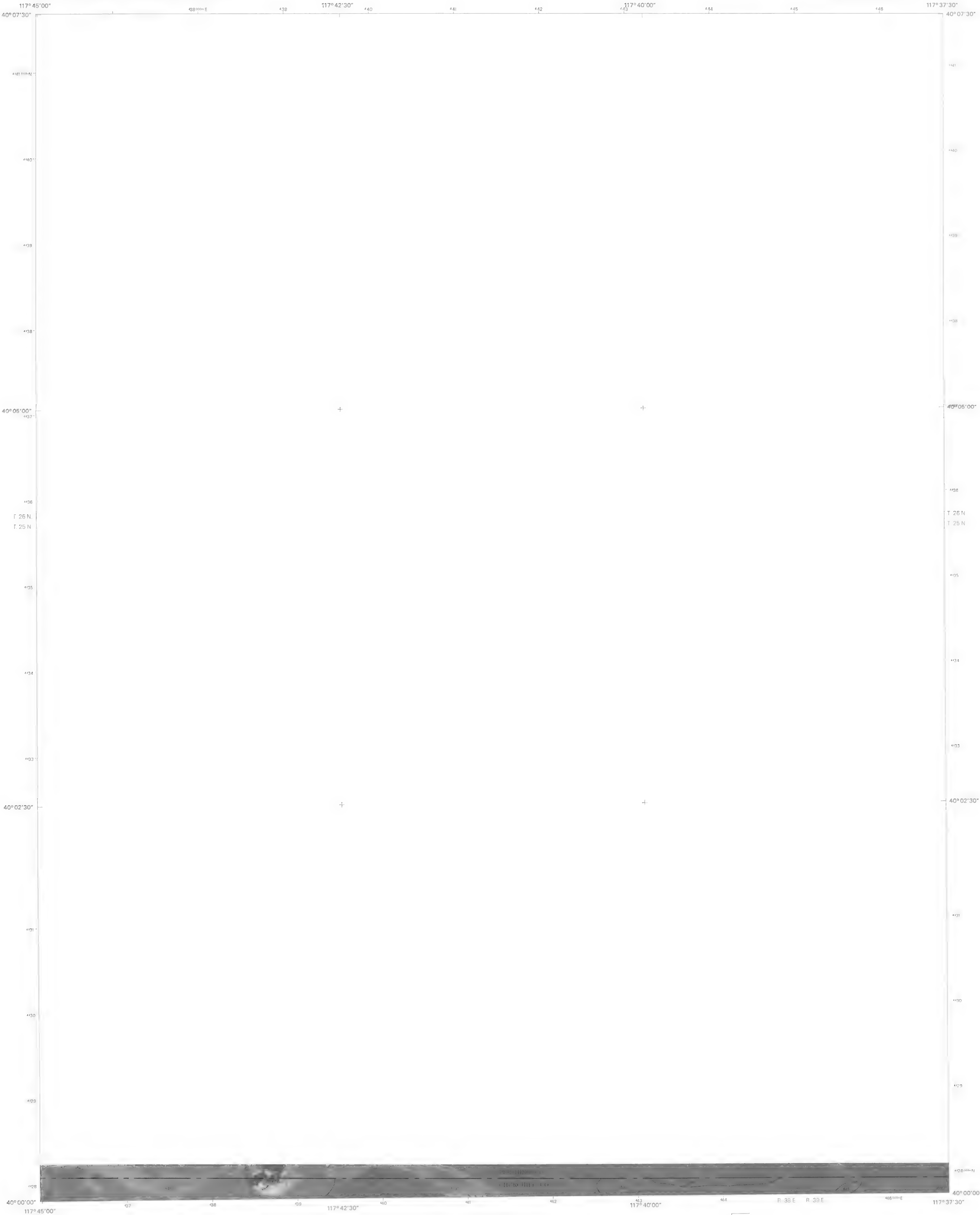


QUADRANGLE LOCATION

1	2	3	1 WEST OF MCKINNEY PASS
4	5	6	2 MCKINNEY PASS
7	8	9	3 SOU HILLS
10	11	12	4 LOGAN PEAK
13	14	15	5 SOU HOT SPRINGS
16	17	18	6 BOLIVIA
19	20	21	7 BOYER RANCH
22	23	24	8 HOLE IN THE WALL

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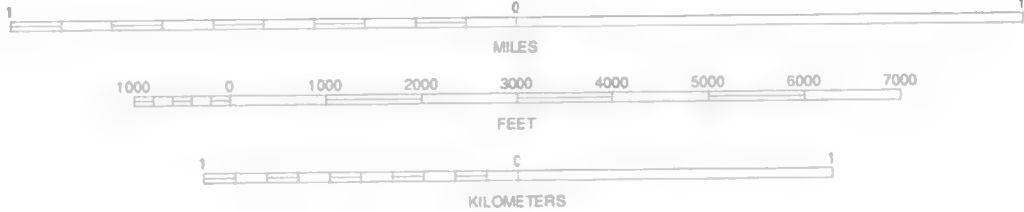
FENCEMAKER PASS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 6



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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH



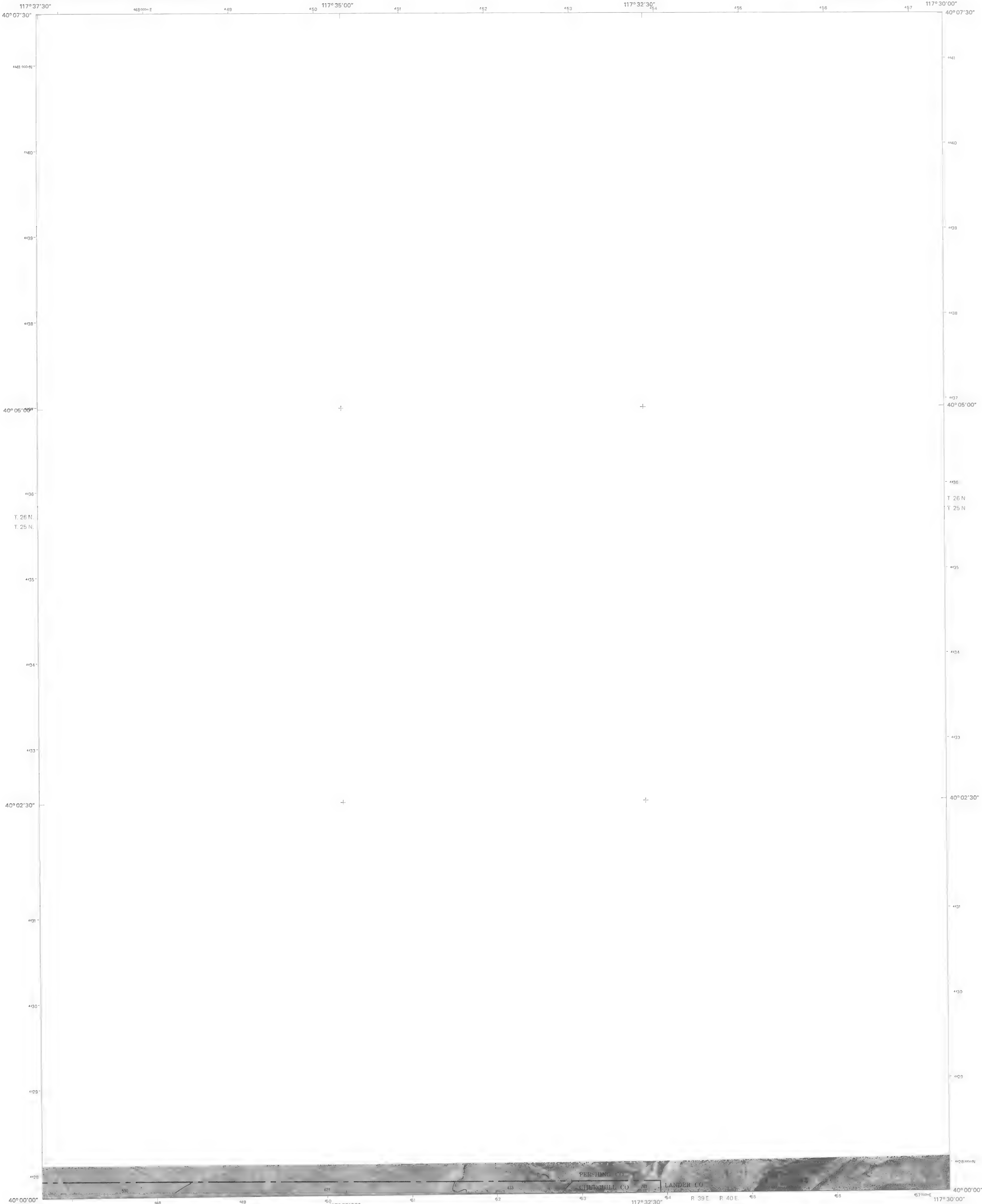
QUADRANGLE LOCATION

1	2	3	1. MCKINNEY PASS
4	5	6	2. SOU HILLS
7	8	9	3. HOME STATION RANCH
10	11	12	4. FENCEMAKER PASS
13	14	15	5. CAIN MOUNTAIN
16	17	18	6. BOYER RANCH
19	20	21	7. HOLE IN THE WALL
22	23	24	8. SHOSHONE MEADOWS NE

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SOU HOT SPRINGS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 7

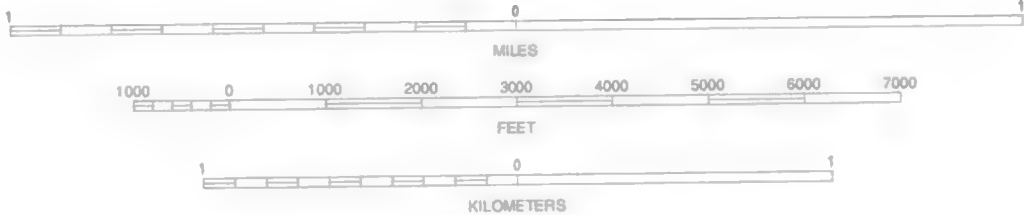




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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid. 1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH



QUADRANGLE LOCATION

1	2	3	1	SOU HILLS
			2	HOME STATION RANCH
			3	MOUNT MOSES
			4	SOU HOT SPRINGS
4		5	5	HOME STATION GAP
			6	HOLE IN THE WALL
			7	SHOSHONE MEADOWS NE
6	7	8	8	GILBERT CREEK NW

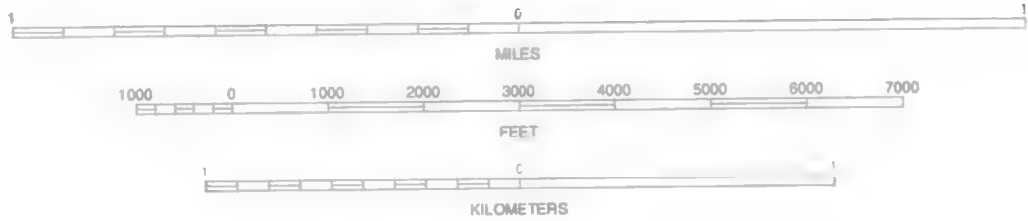
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CAIN MOUNTAIN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 8



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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid 1000-meter ticks. Universal Transverse Mercator, zone 11.

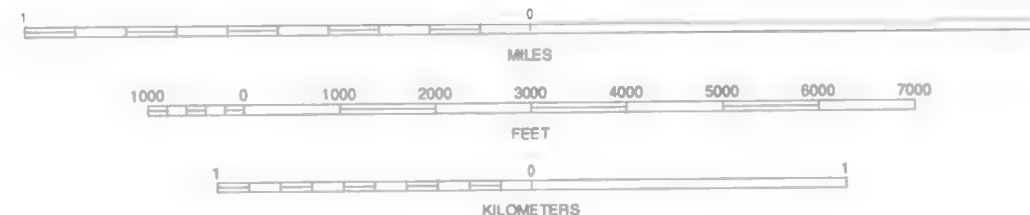


BLACK WARRIOR PEAK, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 9





North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



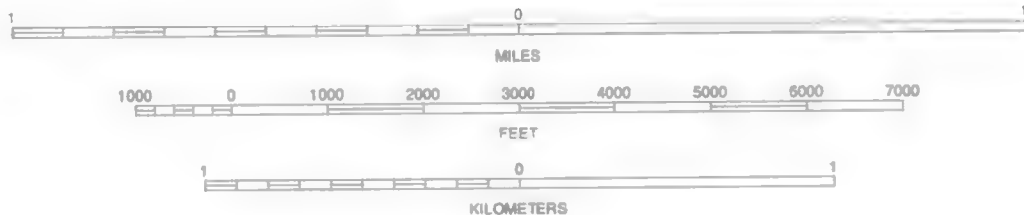
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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

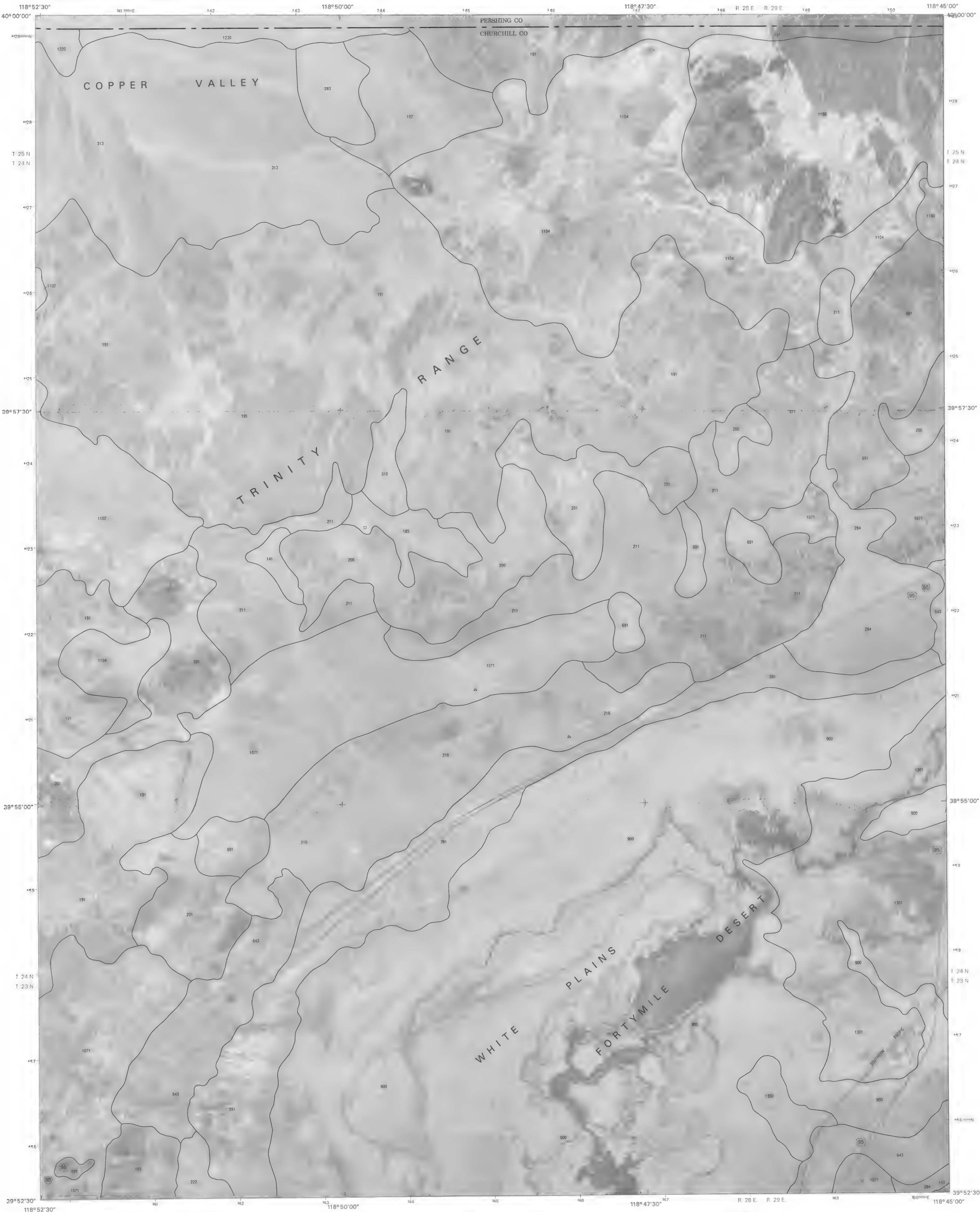
1	2	3
4	5	6
7	8	9

1 BLUEWING SPRING  
2 RAGGED TOP MOUNTAIN SW  
3 RAGGED TOP MOUNTAIN  
4 TELEPHONE WELL  
5 WHITE PLAINS  
6 HOT SPRINGS FLAT  
7 DESERT PEAK  
8 PARRAN

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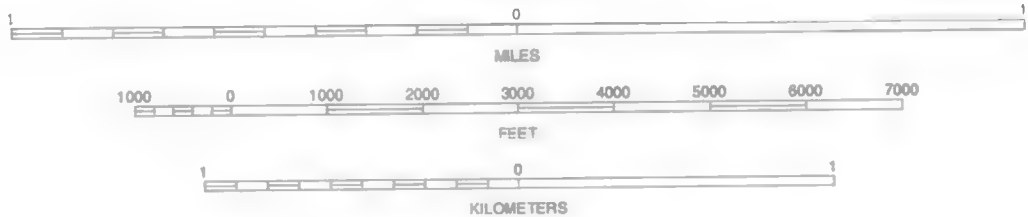
JESSUP, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 11





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



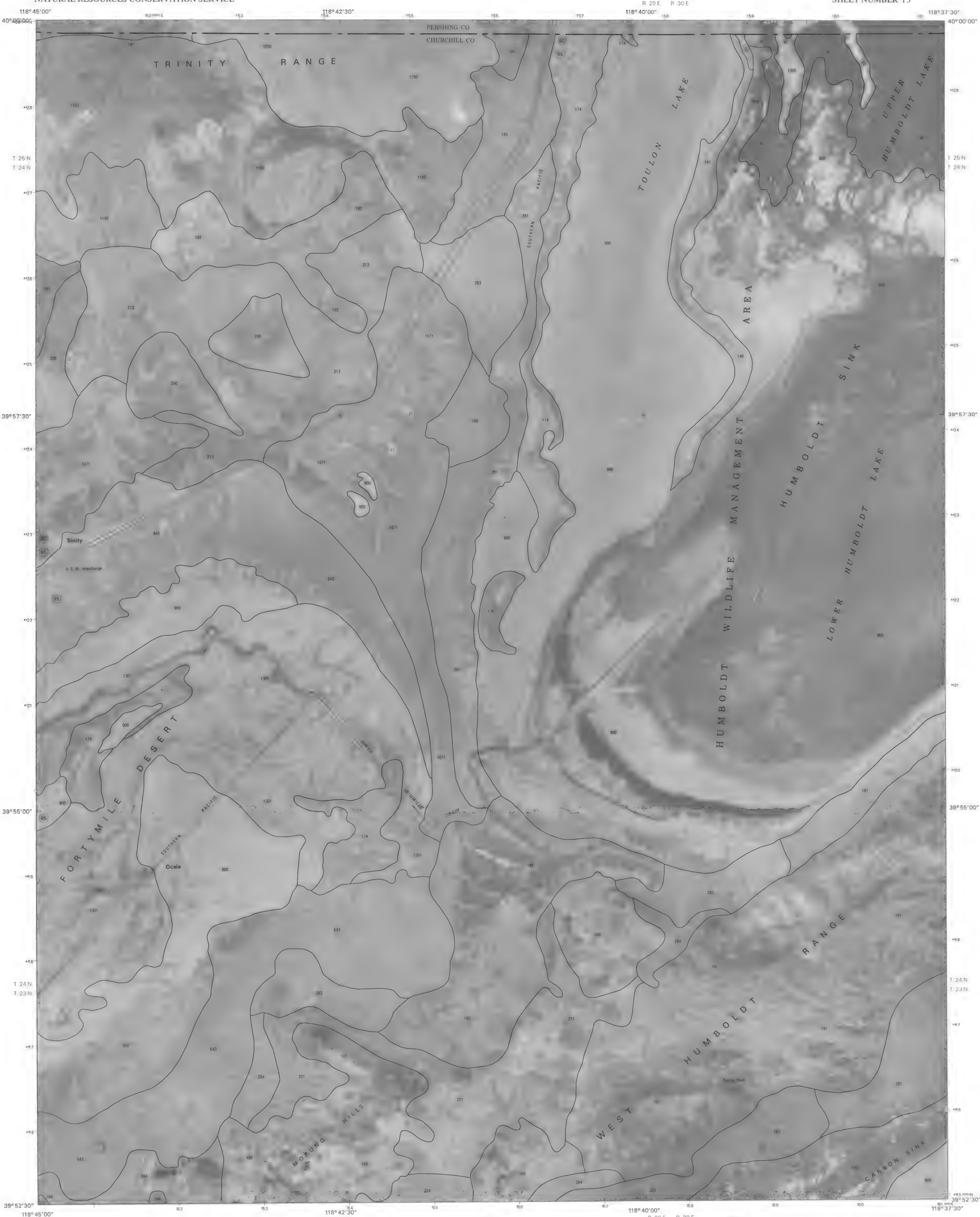
QUADRANGLE LOCATION

1	2	3	1 RAGGED TOP MOUNTAIN SW
			2 RAGGED TOP MOUNTAIN
4		5	3 TOULON PEAK
			4 JESSUP
			5 OCALA
			6 DESERT PEAK
6	7	8	7 PARRAN
			8 CARSON SINK SW

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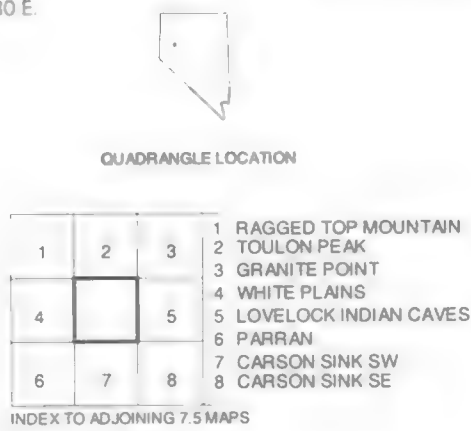
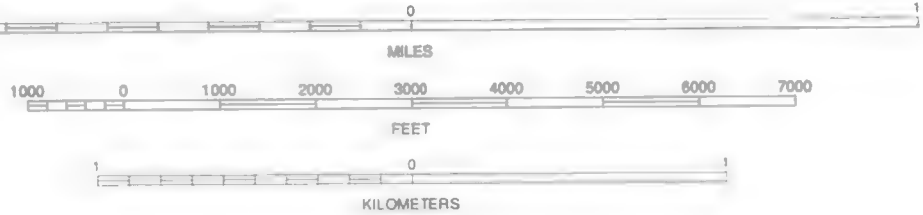
WHITE PLAINS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 12



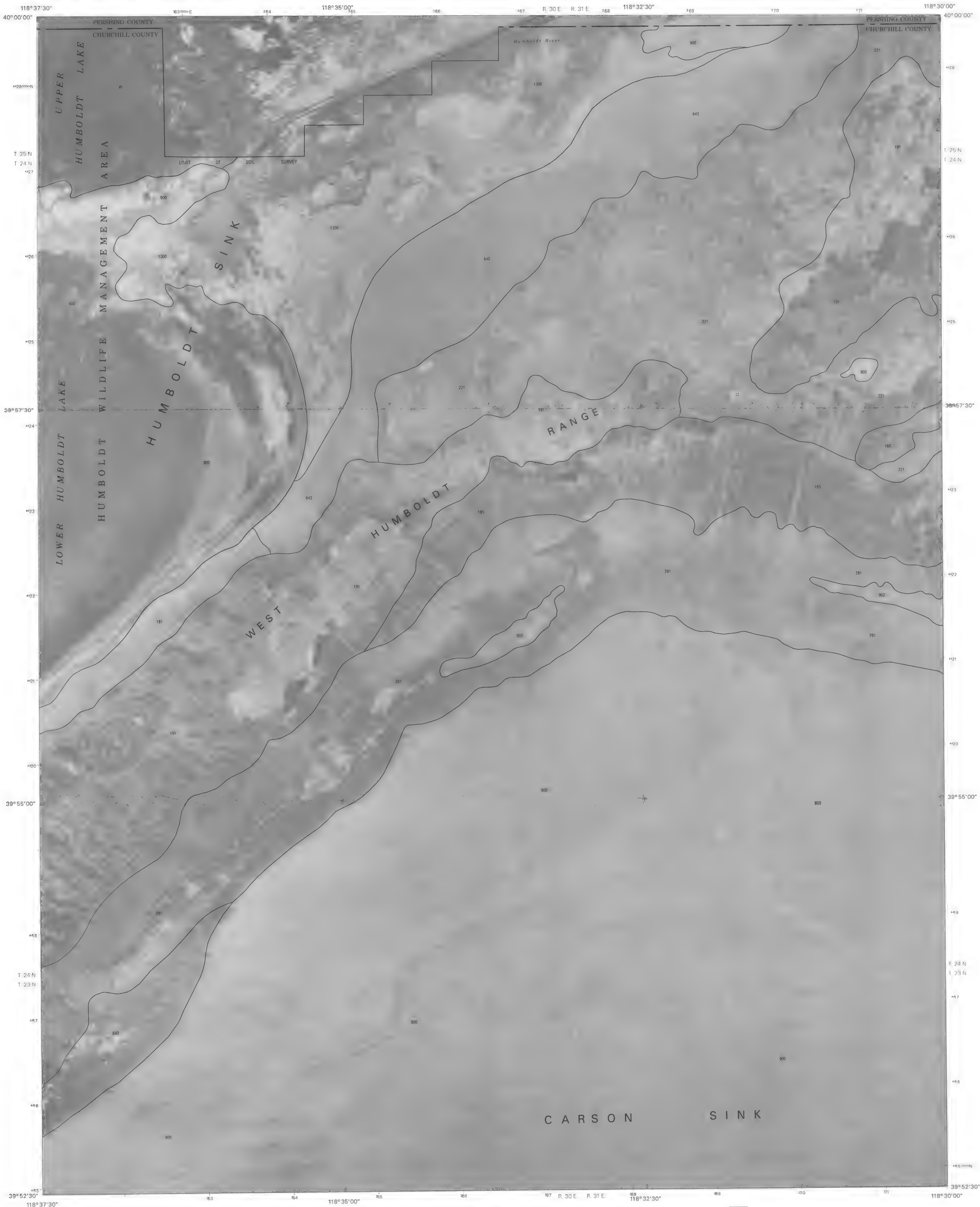


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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

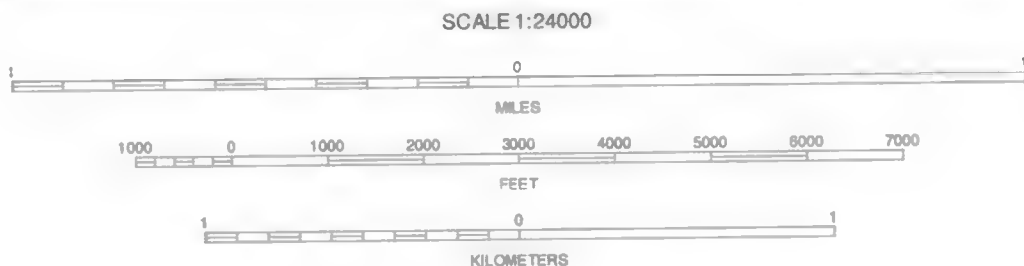


OCALA, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 13



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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

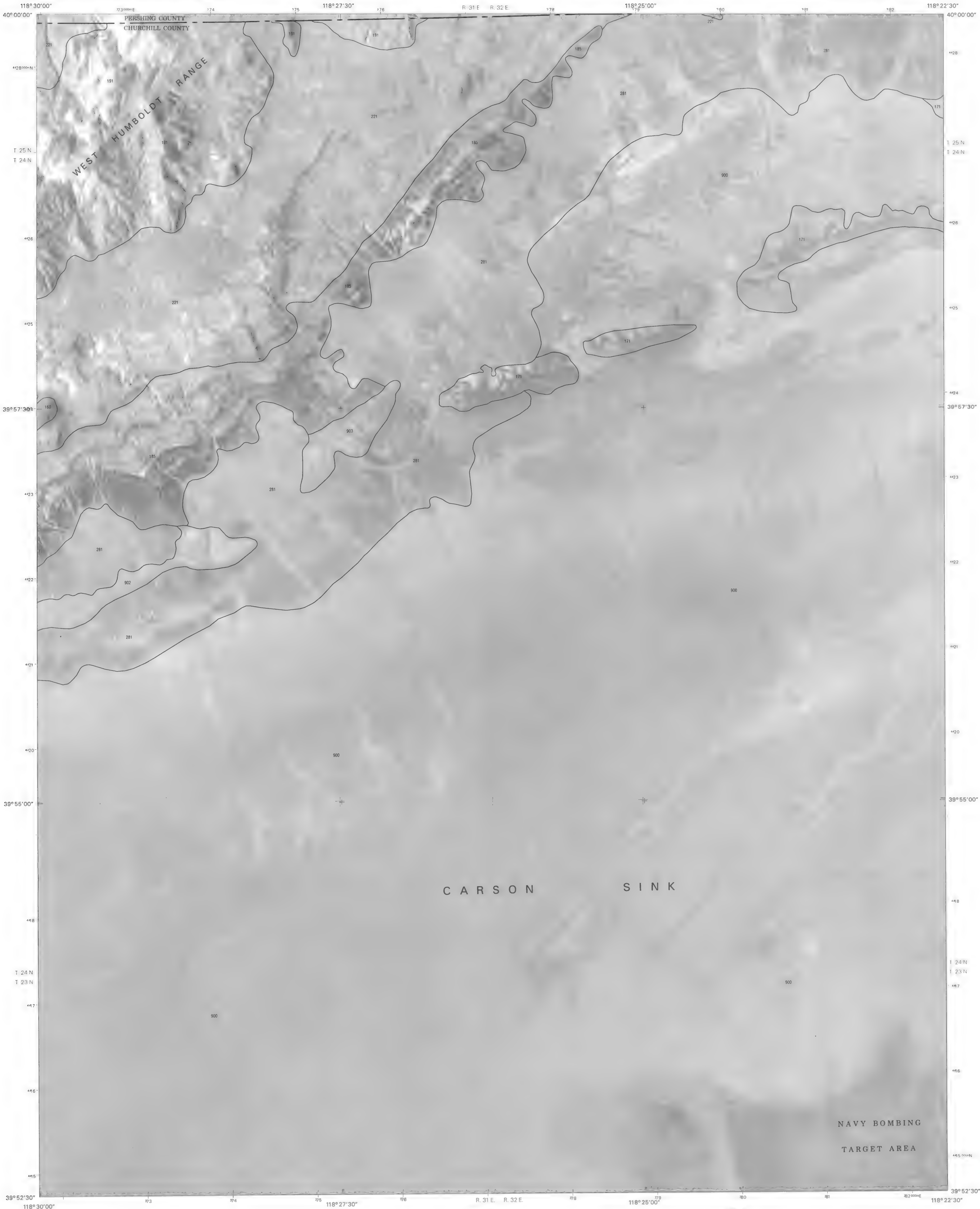
1	2	3	1 TOULON PEAK
			2 GRANITE POINT
			3 WILDHORSE PASS
4		5	4 OCALA
			5 LONE ROCK NW
			6 CARSON SINK SW
6	7	8	7 CARSON SINK SE
			8 LONE ROCK SW

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INDEX TO ADJOINING 7.5 MAPS

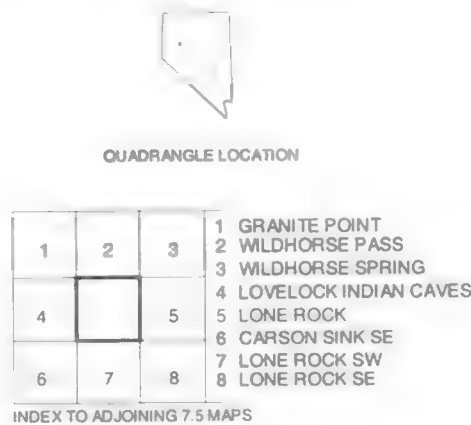
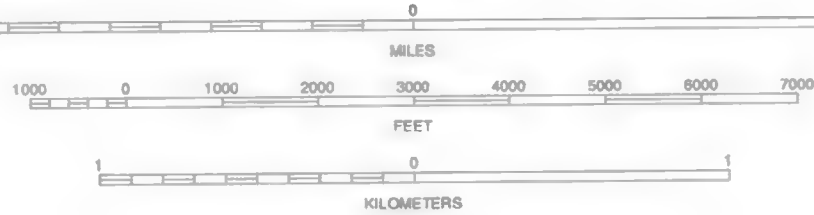
LOVELOCK INDIAN CAVES, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 14





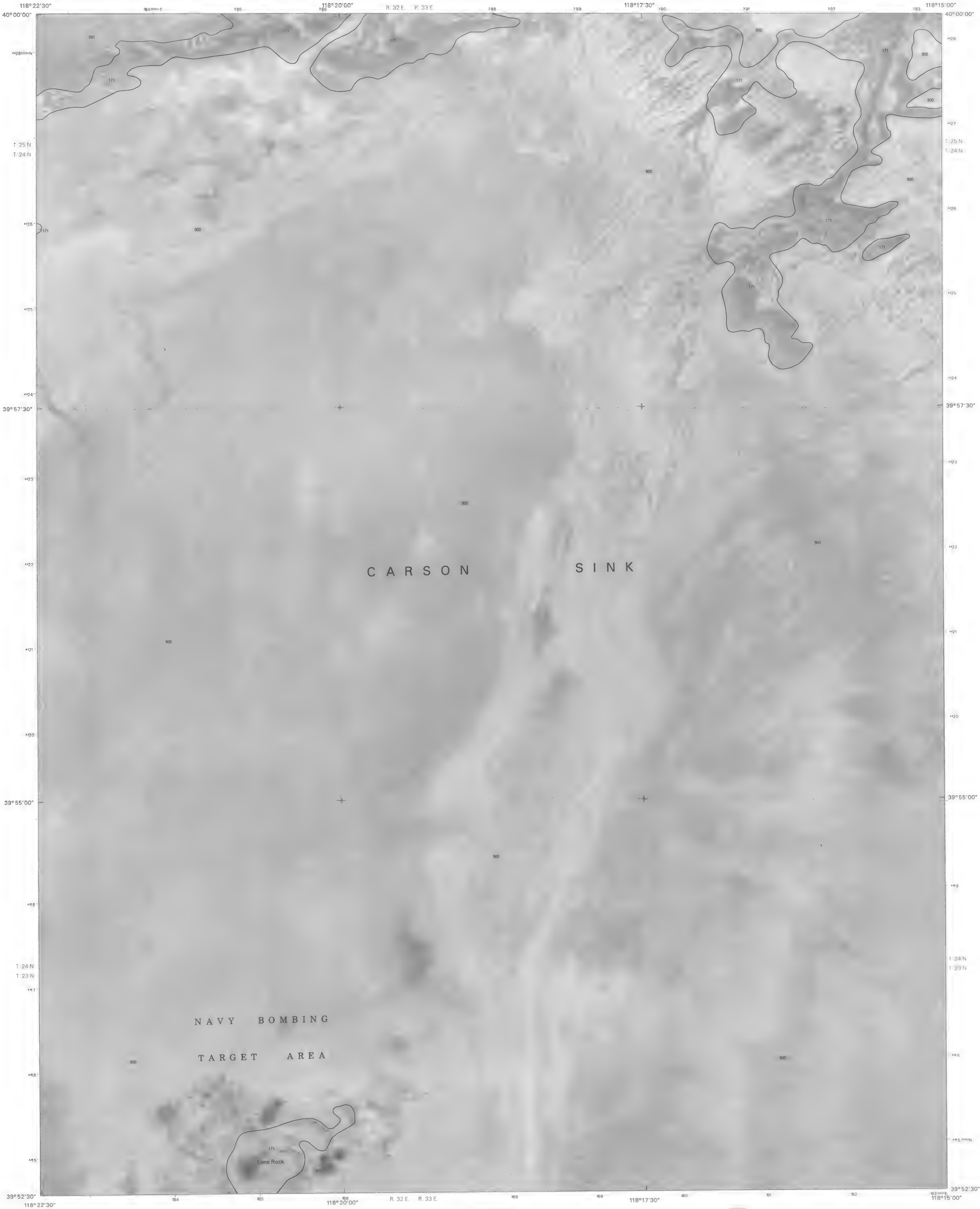
This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



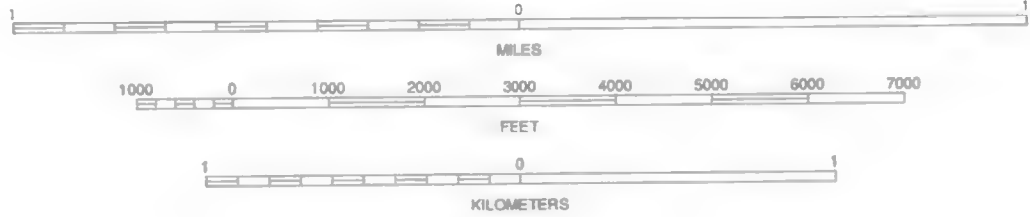
LONE ROCK NW, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 15





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

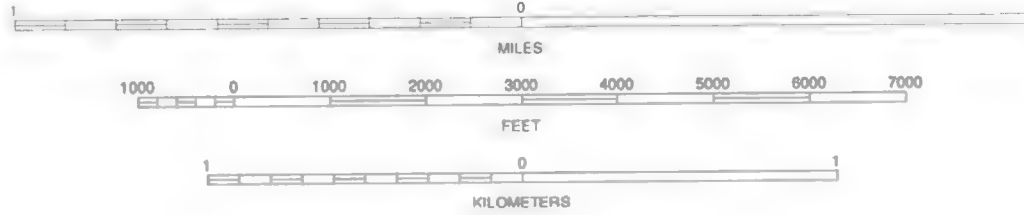


LONE ROCK, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 16



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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid. 1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

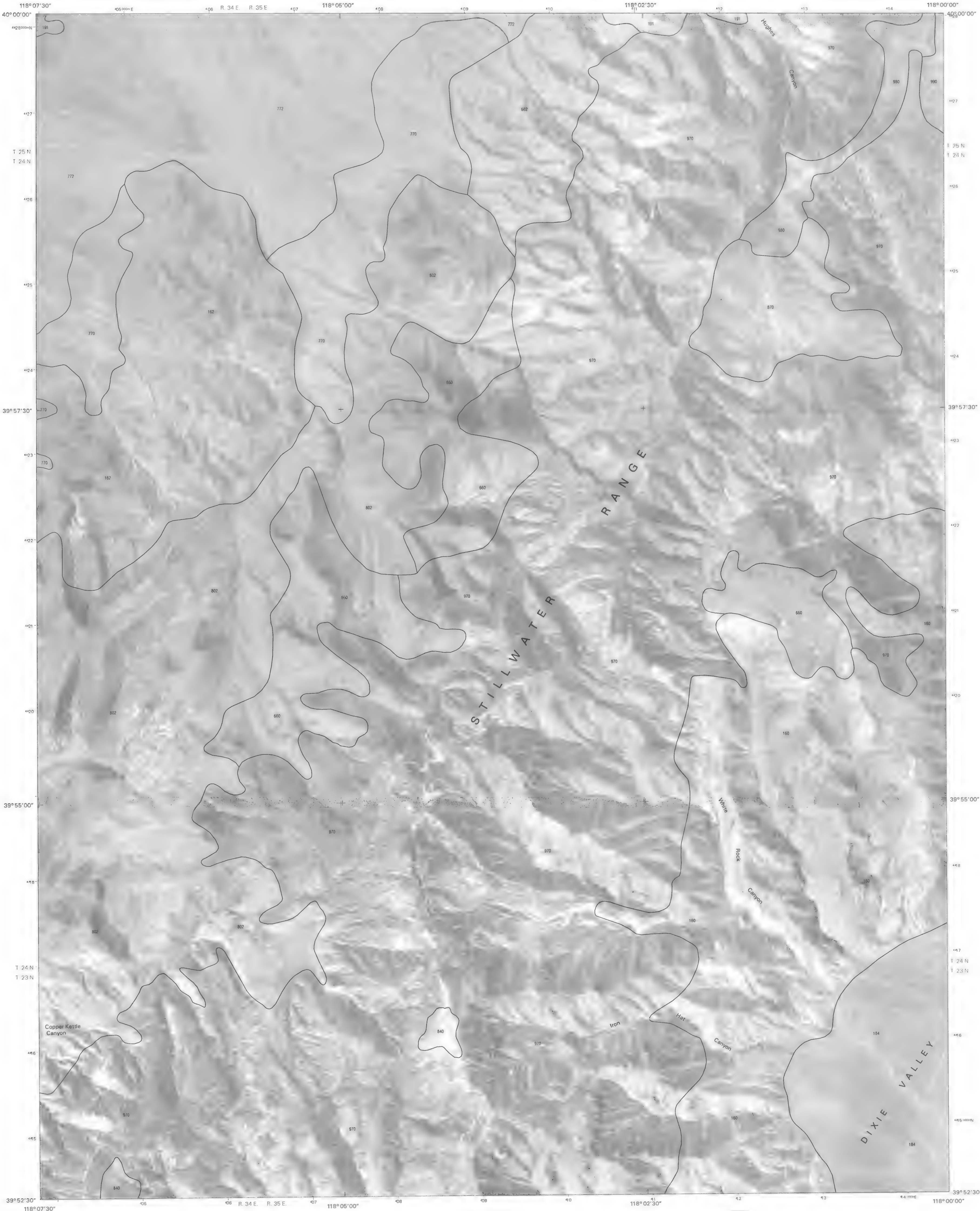
1	2	3
4	5	6
7	8	9

1 WILDHORSE SPRING  
2 BUENA VISTA HILLS NORTH  
3 CORNISH PEAK  
4 LONE ROCK  
5 DIXIE HOT SPRINGS NE  
6 LONE ROCK SE  
7 FONDWAY CANYON  
8 DIXIE HOT SPRINGS

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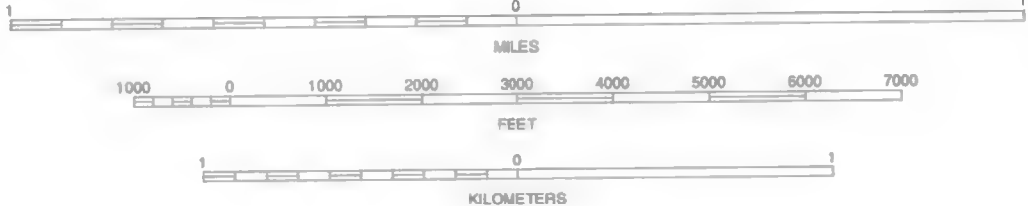
BUENA VISTA HILLS SOUTH, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 17





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



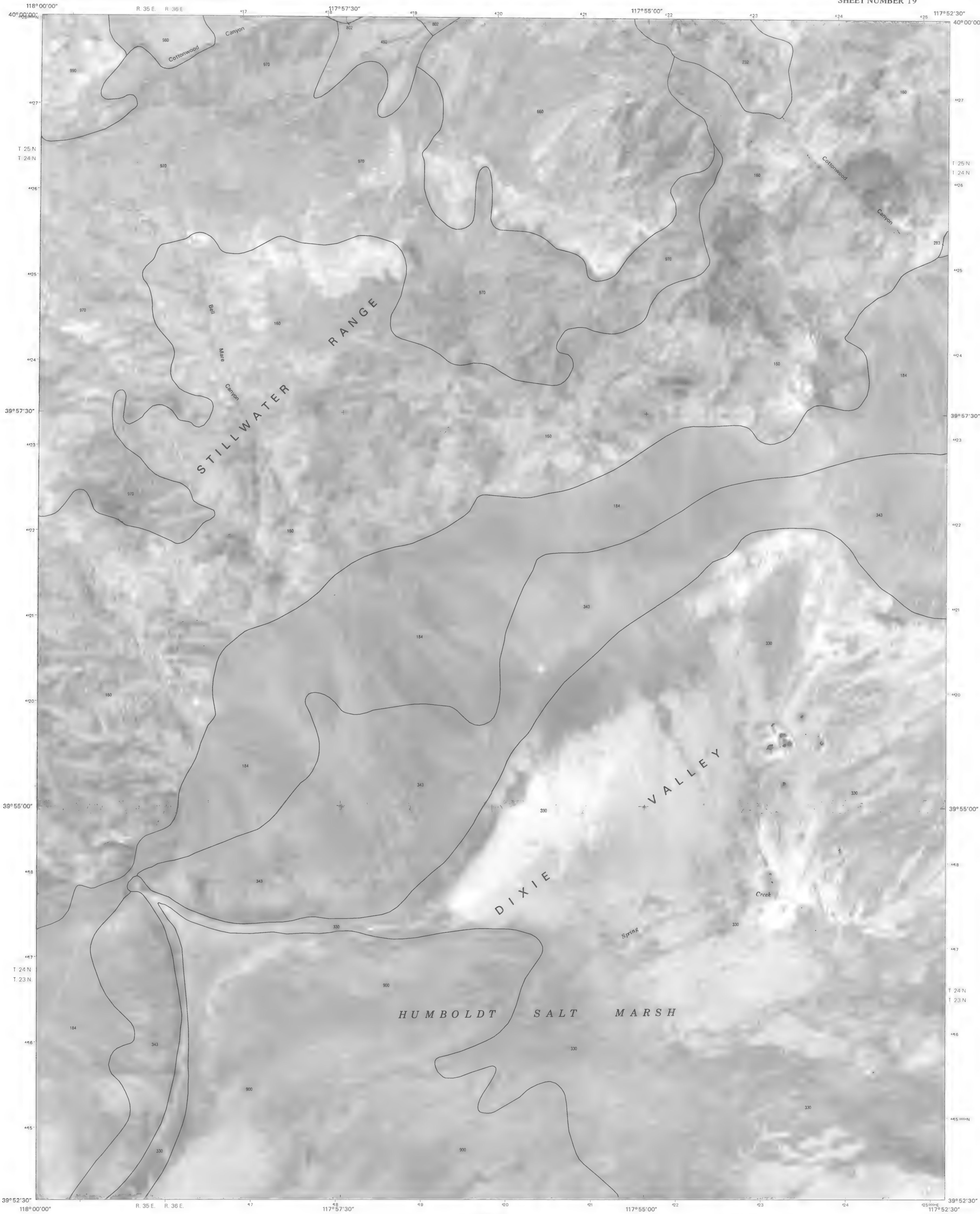
QUADRANGLE LOCATION

1	2	3	1 BUENA VISTA HILLS NORTH
			2 CORNISH PEAK
			3 LOGAN PEAK
4		5	4 BUENA VISTA HILLS SOUTH
			5 BOLIVIA
			6 FONDADWAY CANYON
			7 DIXIE HOT SPRINGS
6	7	8	8 HUMBOLDT SALT MARSH

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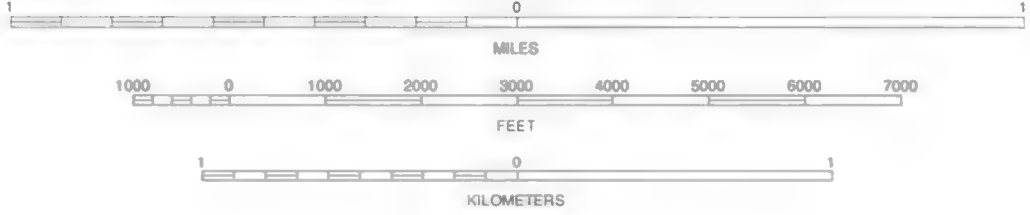
DIXIE HOT SPRINGS NE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 18



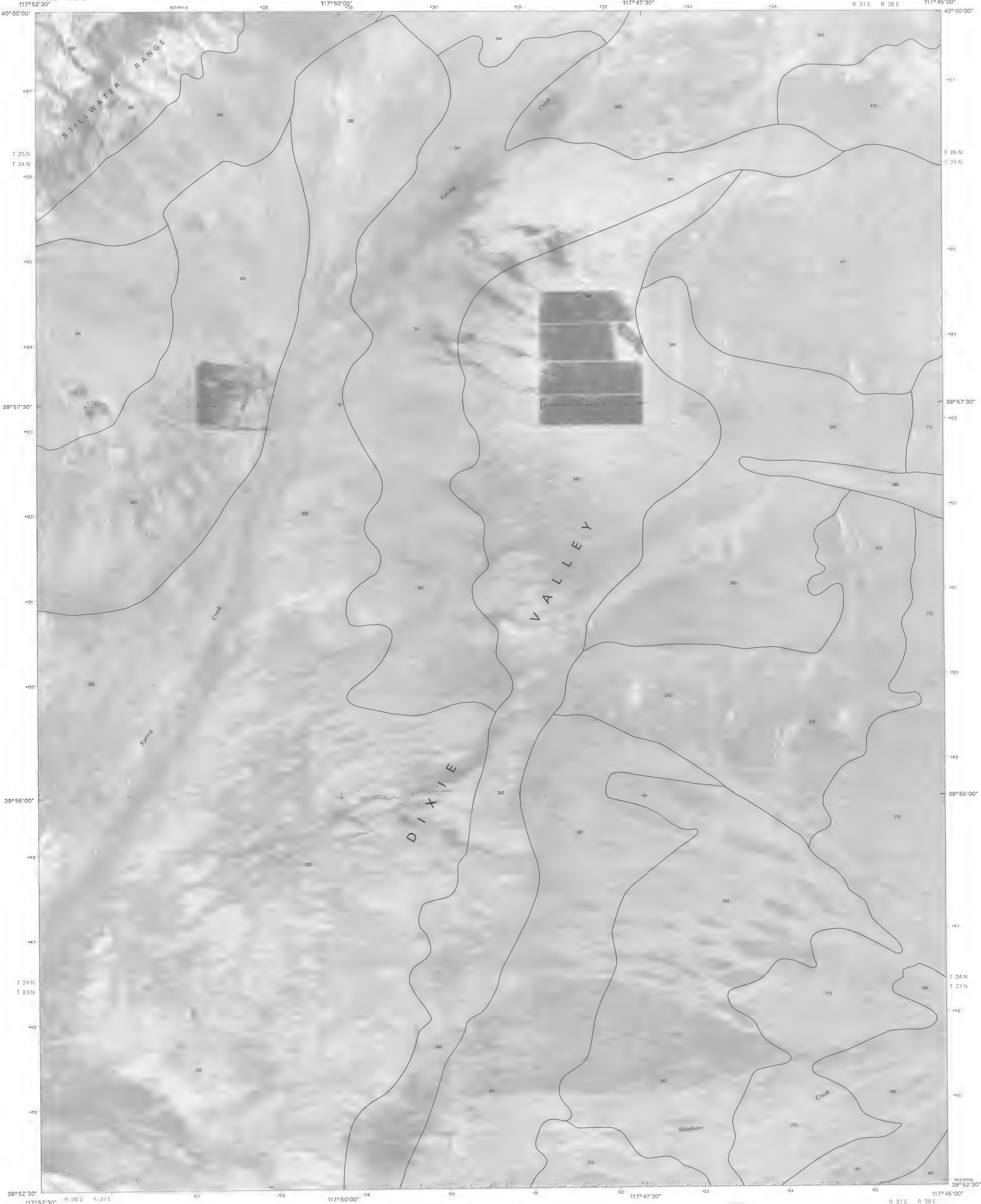


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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



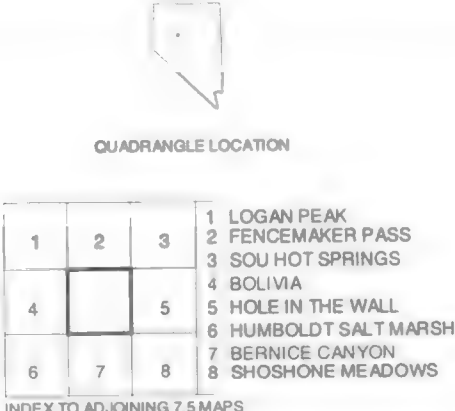
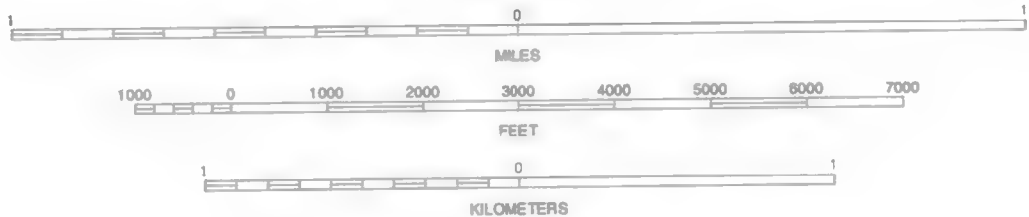
BOLIVIA, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 19



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH



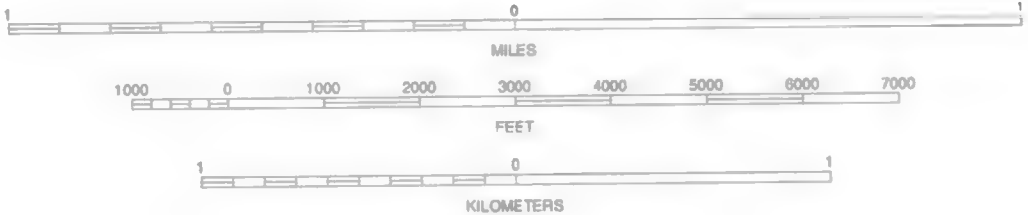
BOYER RANCH, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 20





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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11.

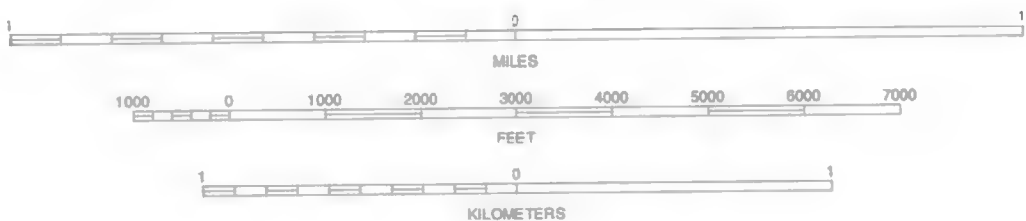


HOLE IN THE WALL, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 21



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1. SOU HOT SPRINGS
4	5	2. CAIN MOUNTAIN	
6	7	3. HOME STATION GAP	
		4. HOLE IN THE WALL	
		5. GILBERT CREEK-NW	
		6. SHOSHONE MEADOWS	
		7. SHOSHONE MEADOWS SE	
		8. GILBERT CREEK SW	

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SHOSHONE MEADOWS NE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 22



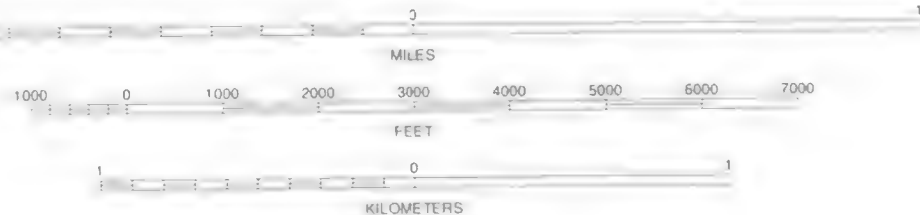


This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH

SCALE 1:24000



QUADRANGLE LOCATION

1	2	3	1 CAIN MOUNTAIN
			2 HOME STATION GAP
			3 MOUNT MOSES SE
4		5	4 SHOSHONE MEADOWS NE
			5 GILBERT CREEK NE
			6 SHOSHONE MEADOWS SE
6	7	8	7 GILBERT CREEK SW
			8 GILBERT CREEK SE

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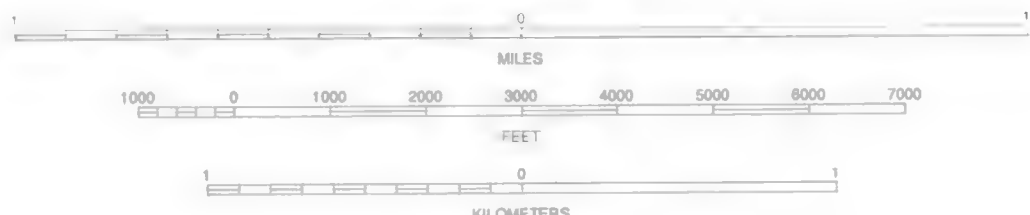
GILBERT CREEK NW, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 23





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	9

- 1 RUSSELL PEAK
- 2 BLACK WARRIOR PEAK
- 3 TELEPHONE WELL
- 4 NIXON
- 5 HOT SPRINGS FLAT
- 6 WADSWORTH
- 7 TWO TIPS
- 8 EAGLE ROCK

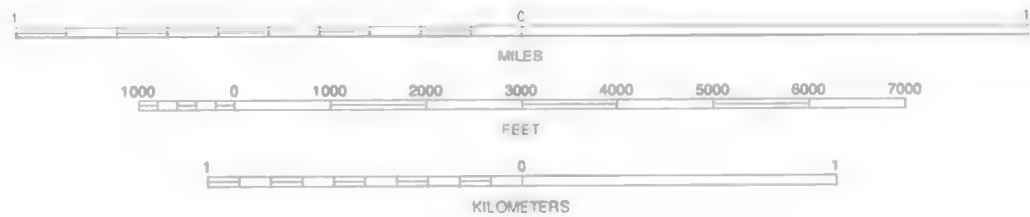
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JUNIPER PEAK, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 24



This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	9

1 BLACK WARRIOR PEAK  
2 TELEPHONE WELL  
3 JESSUP  
4 JUNIPER PEAK  
5 DESERT PEAK  
6 TWO TIPS  
7 EAGLE ROCK  
8 SODA LAKE NW

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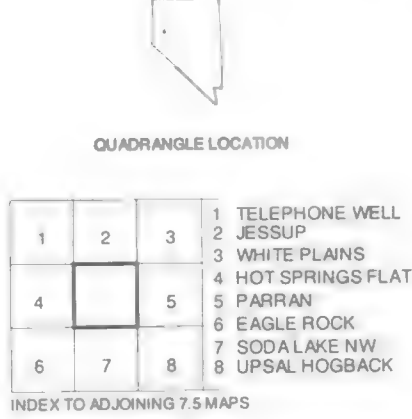
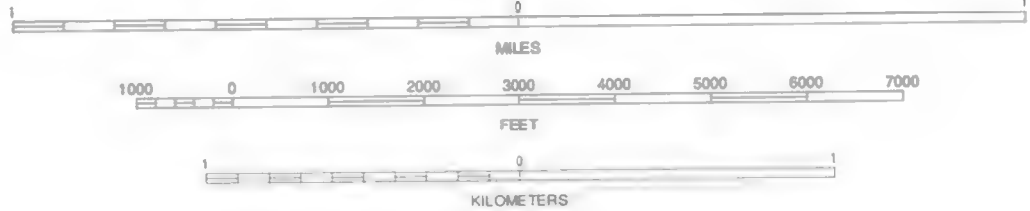
HOT SPRINGS FLAT, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 25





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



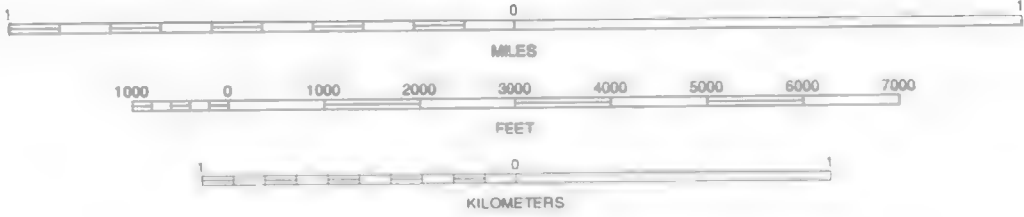
DESERT PEAK, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 26





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

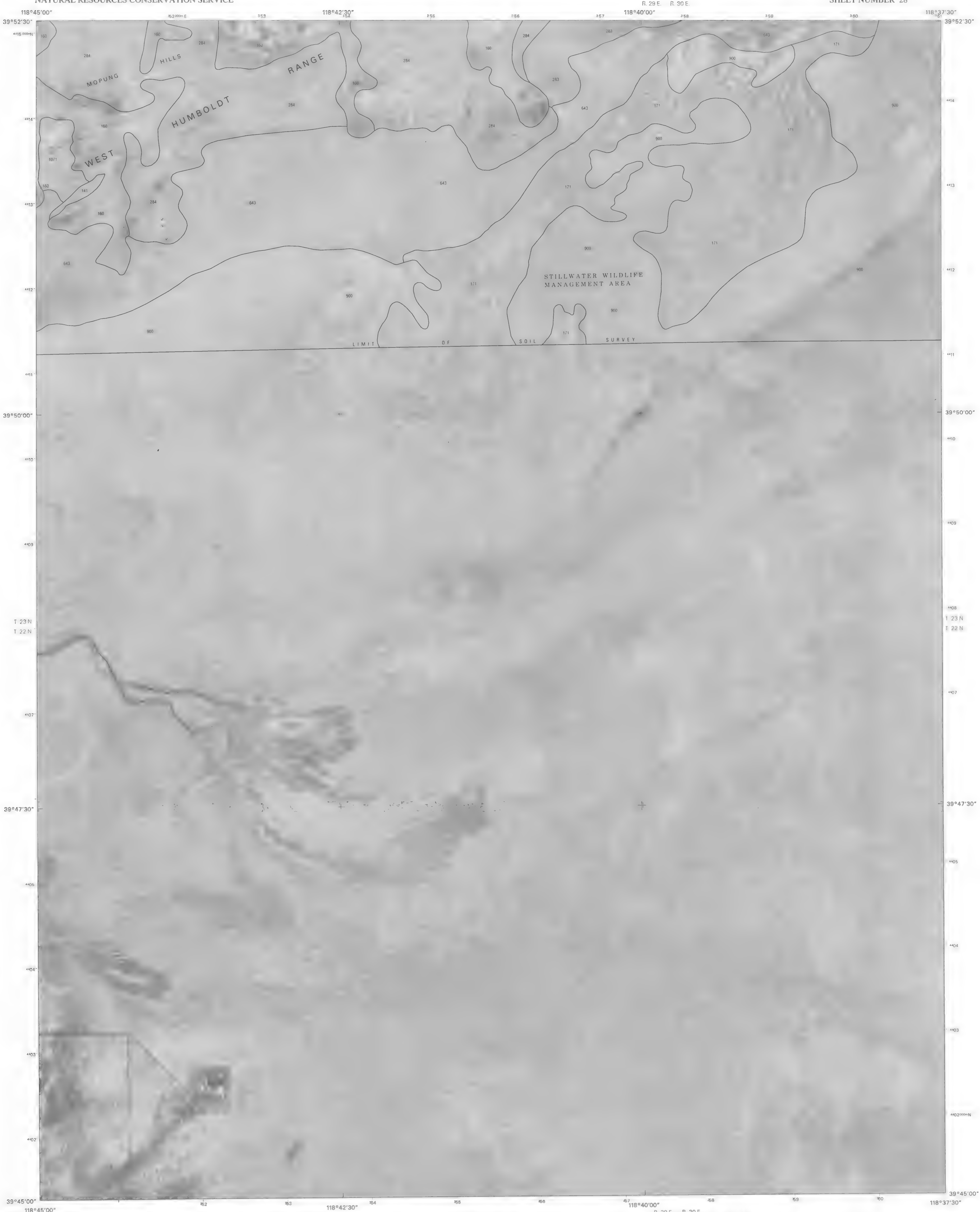


QUADRANGLE LOCATION

1	2	3	1 JESSUP
2	3	4	2 WHITE PLAINS
3	4	5	3 OCALA
4	5	6	4 DESERT PEAK
5	6	7	5 CARSON SINK SW
6	7	8	6 SODALAKE NW
7	8		7 UPSAL HOGBACK
8			8 BATTLEGROUND POINT

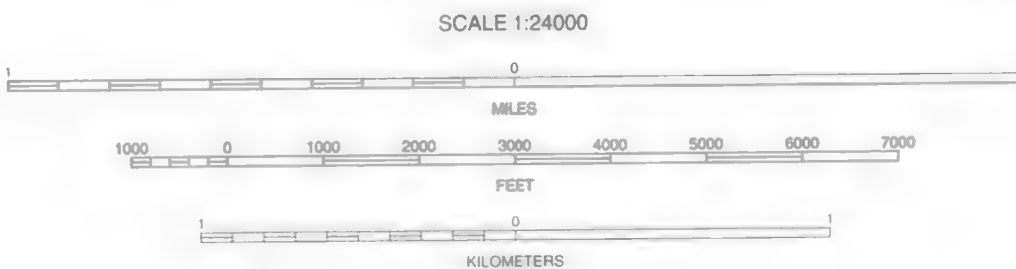
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PARRAN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 27



This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	9

1 WHITE PLAINS  
2 OCALA  
3 LOVELOCK INDIAN CAVES  
4 PARRAN  
5 CARSON SINK SE  
6 UPSAL HOGBACK  
7 BATTLEGROUND POINT  
8 STILLWATER NE

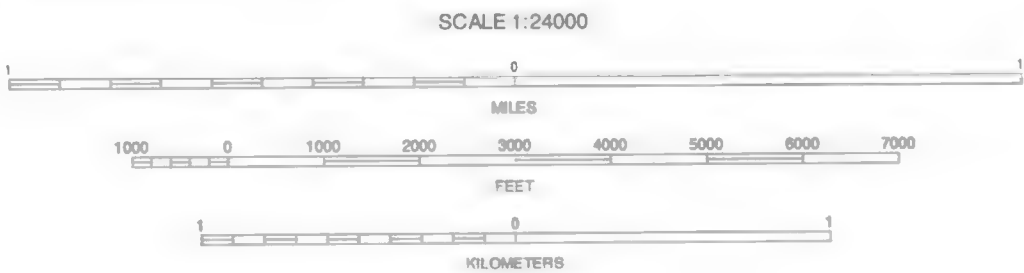
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CARSON SINK SW, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 28



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 Ocala
			2 LOVELOCK INDIAN CAVES
			3 LONE ROCK NW
4		5	4 CARSON SINK SW
			5 LONE ROCK SW
			6 BATTLEGROUND POINT
6	7	8	7 STILLWATER NE
			8 PINTAL BAY

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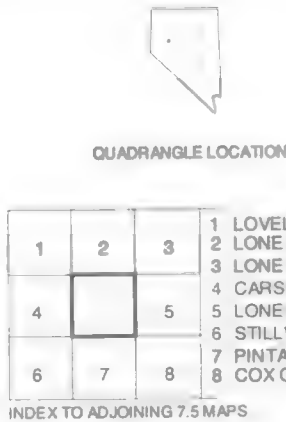
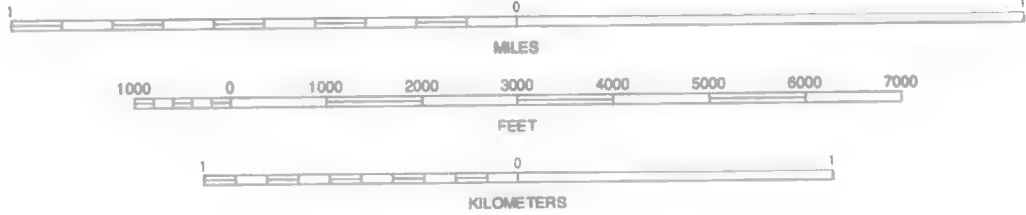
CARSON SINK SE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 29





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



LONE ROCK SW, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 30

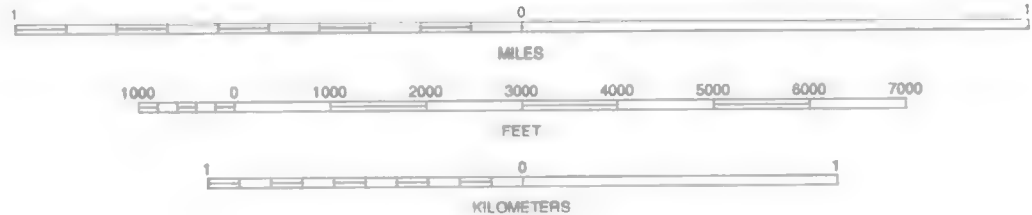
1	2	3	1 LOVELOCK INDIAN CAVES
			2 LONE ROCK NW
			3 LONE ROCK
4		5	4 CARSON SINK SE
			5 LONE ROCK SE
			6 STILLWATER NE
6	7	8	7 PINTAIL BAY
			8 COX CANYON

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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

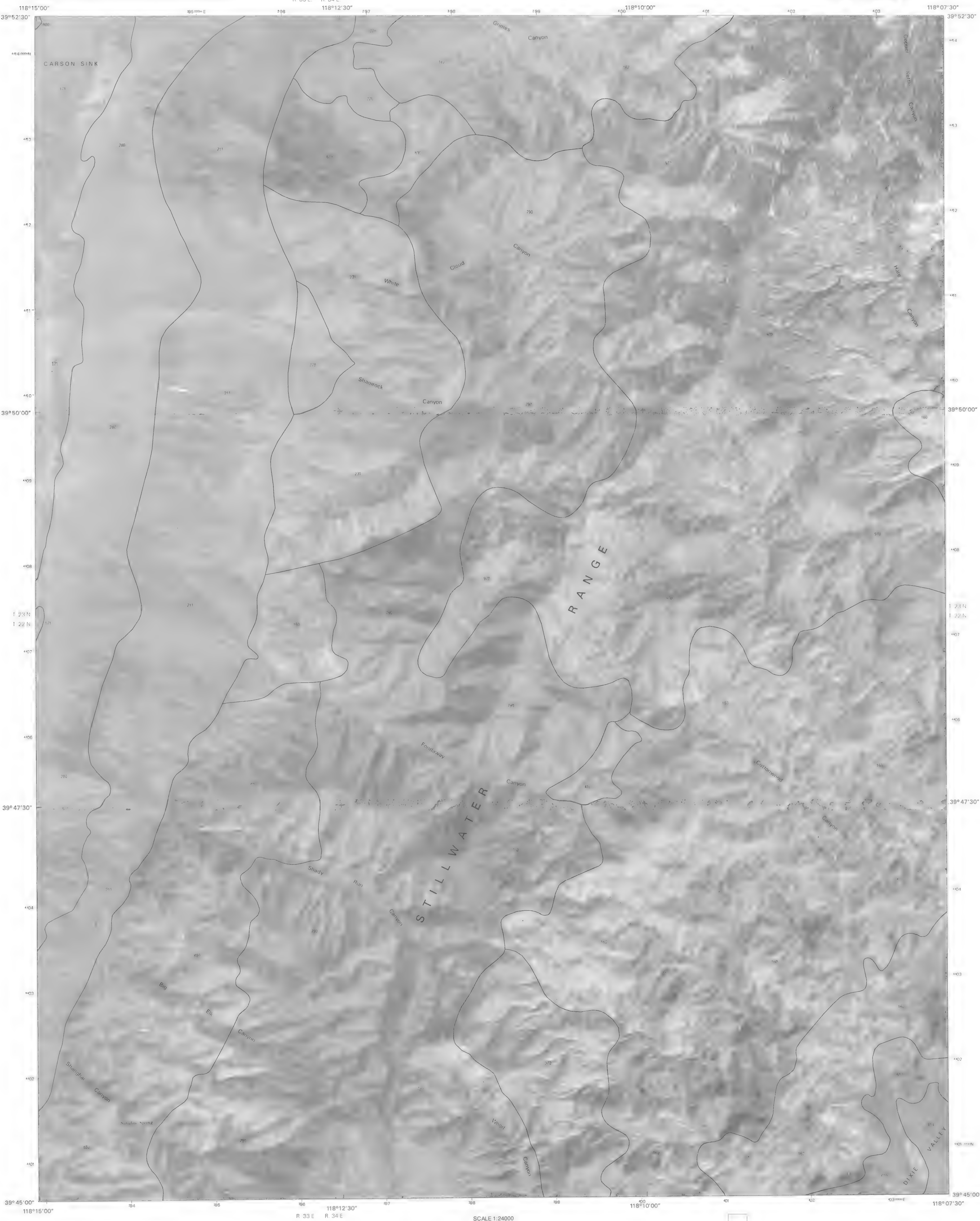
1	2	3
4	5	6
7	8	9

1 LONE ROCK NW  
2 LONE ROCK  
3 BUENA VISTA HILLS SOUTH  
4 LONE ROCK SW  
5 FONDADWAY CANYON  
6 PINTAIL BAY  
7 COX CANYON  
8 IXL CANYON

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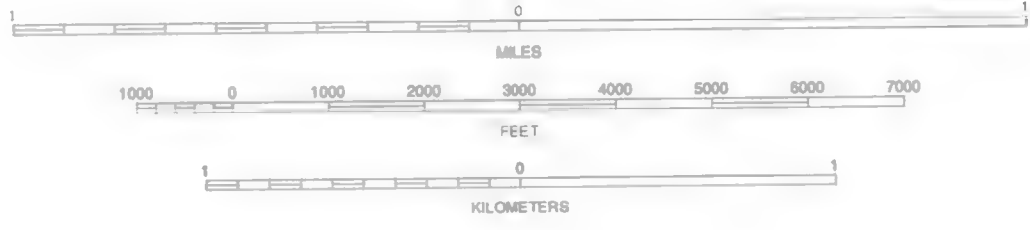
LONE ROCK SE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 31





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 LONE ROCK
			2 BUENA VISTA HILLS SOUTH
			3 DIXIE HOT SPRINGS NE
4		5	4 LONE ROCK SE
			5 DIXIE HOT SPRINGS
			6 COX CANYON
6	7	8	7 LXL CANYON
			8 DIXIE VALLEY

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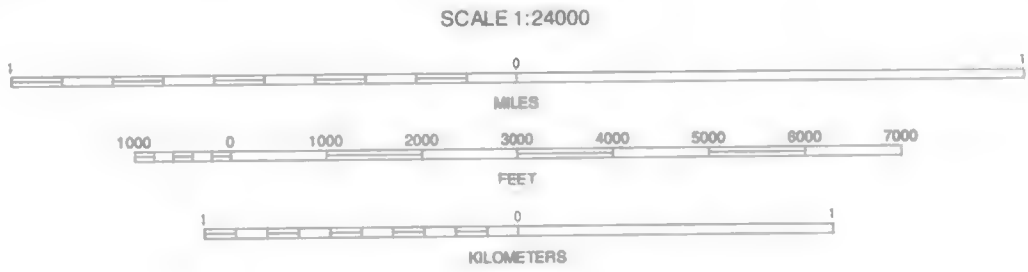
FONDAWAY CANYON, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 32





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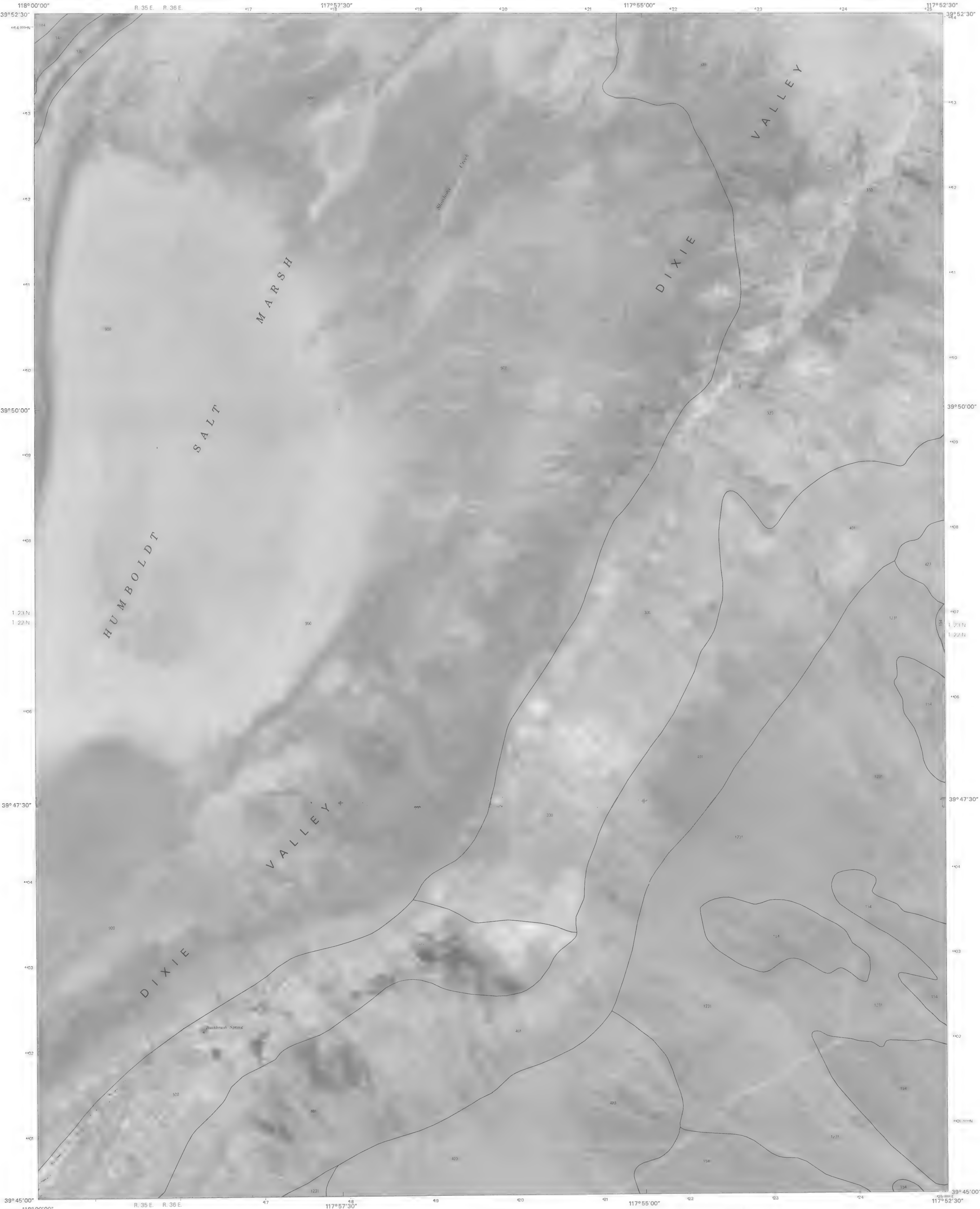
North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION			1	2	3	1	BUENA VISTA HILLS SOUTH
1	2	3	4	5	6	2	DIXIE HOT SPRINGS NE
4	5	6	7	8	7	3	BOLIVIA
6	7	8			8	4	PONDWAY CANYON
						5	HUMBOLDT SALT MARSH
						6	I X L CANYON
						7	DIXIE VALLEY
						8	COW CANYON

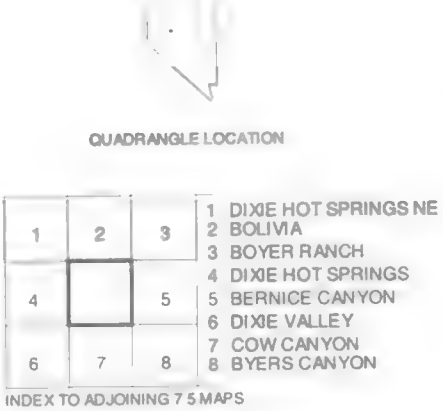
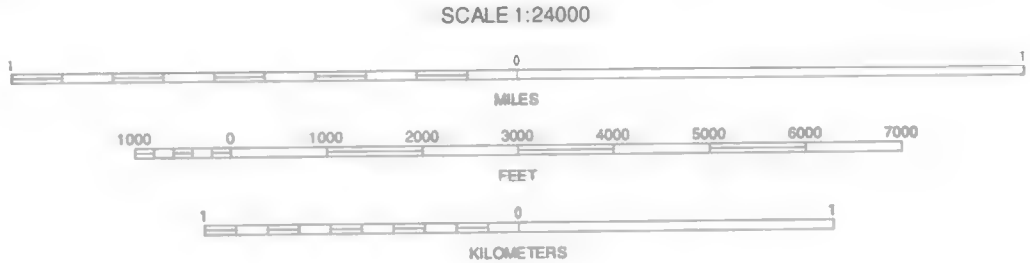
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DIXIE HOT SPRINGS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 33



This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

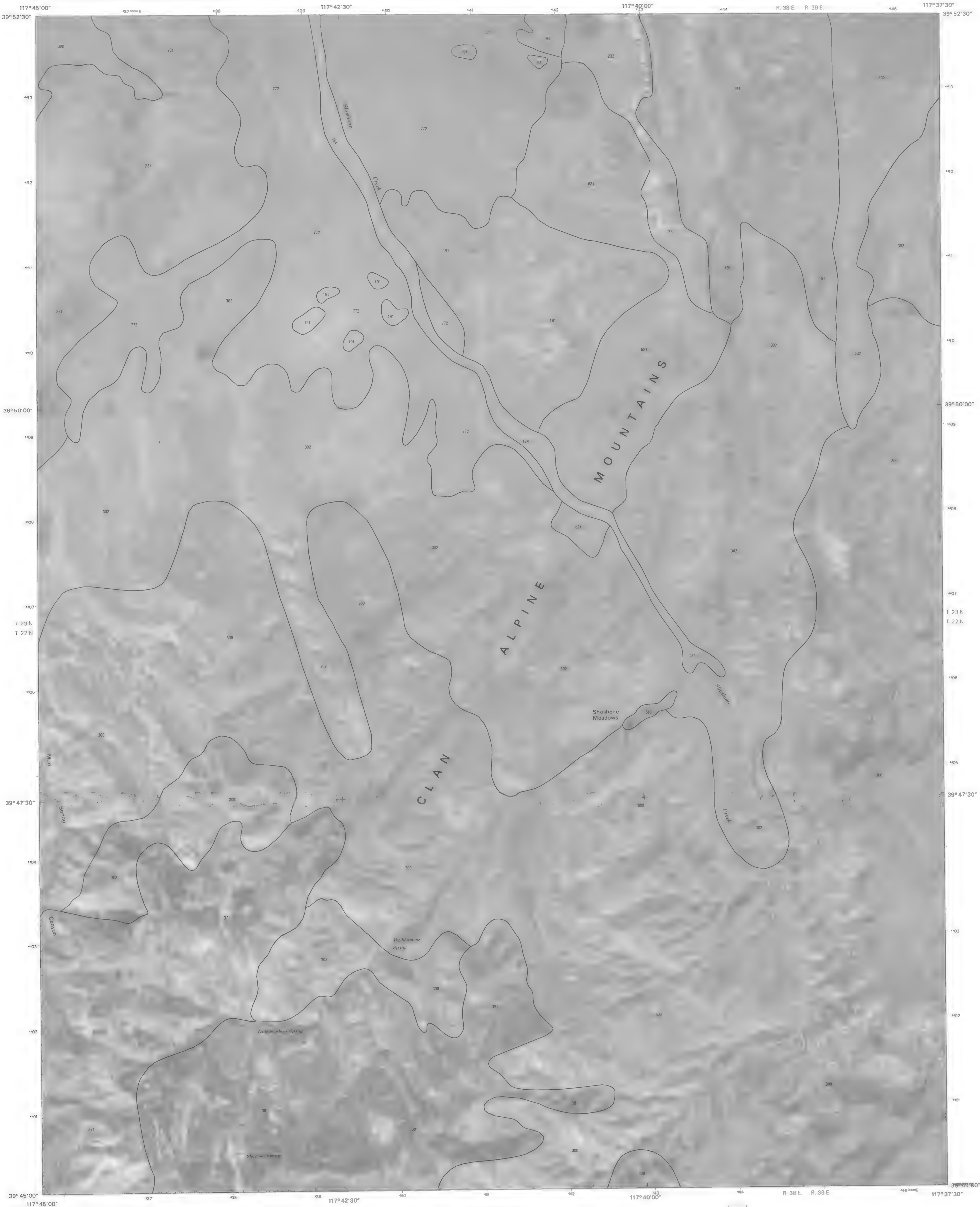
North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



HUMBOLDT SALT MARSH, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 34

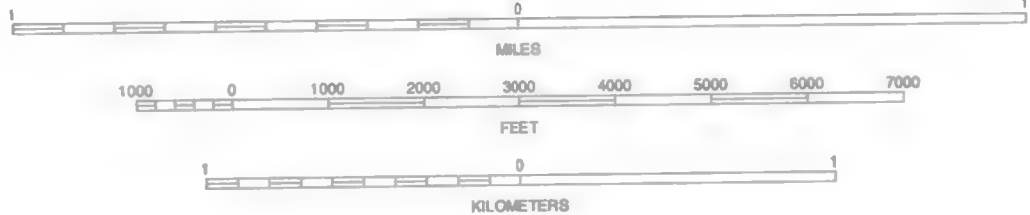






This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



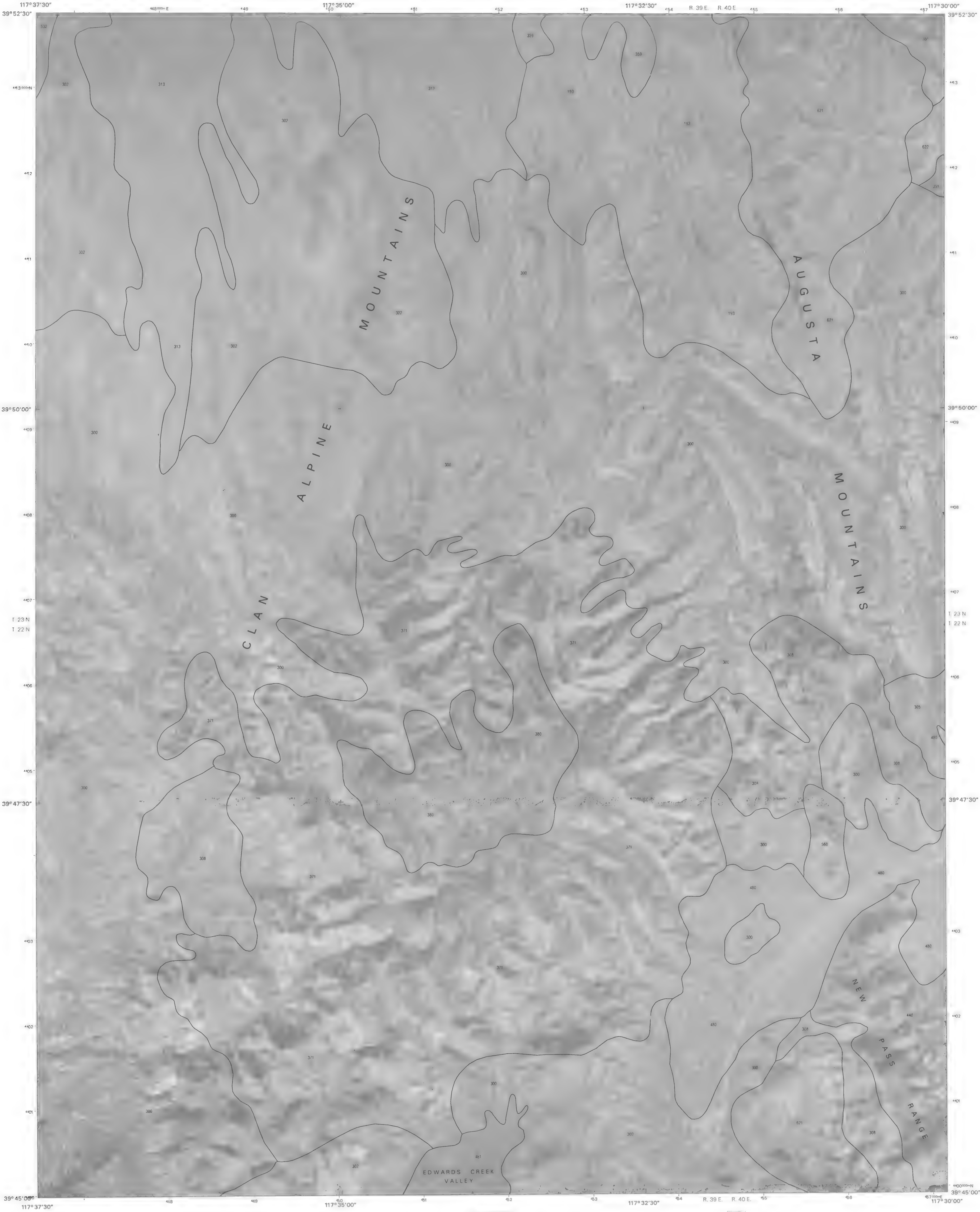
QUADRANGLE LOCATION

1	2	3	1 BOYER RANCH
4	5	2 HOLE IN THE WALL	3 SHOSHONE MEADOWS NE
6	7	4 BERNICE CANYON	5 SHOSHONE MEADOWS SE
		6 DYERS CANYON	7 TUNGSTEN MOUNTAIN
		8 NEW PASS WELL	

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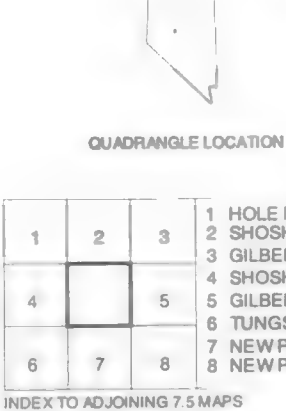
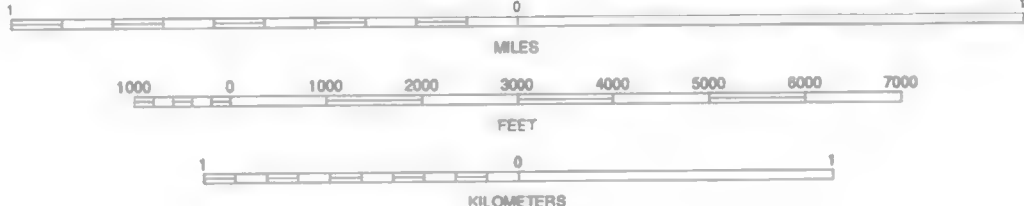
SHOSHONE MEADOWS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 36



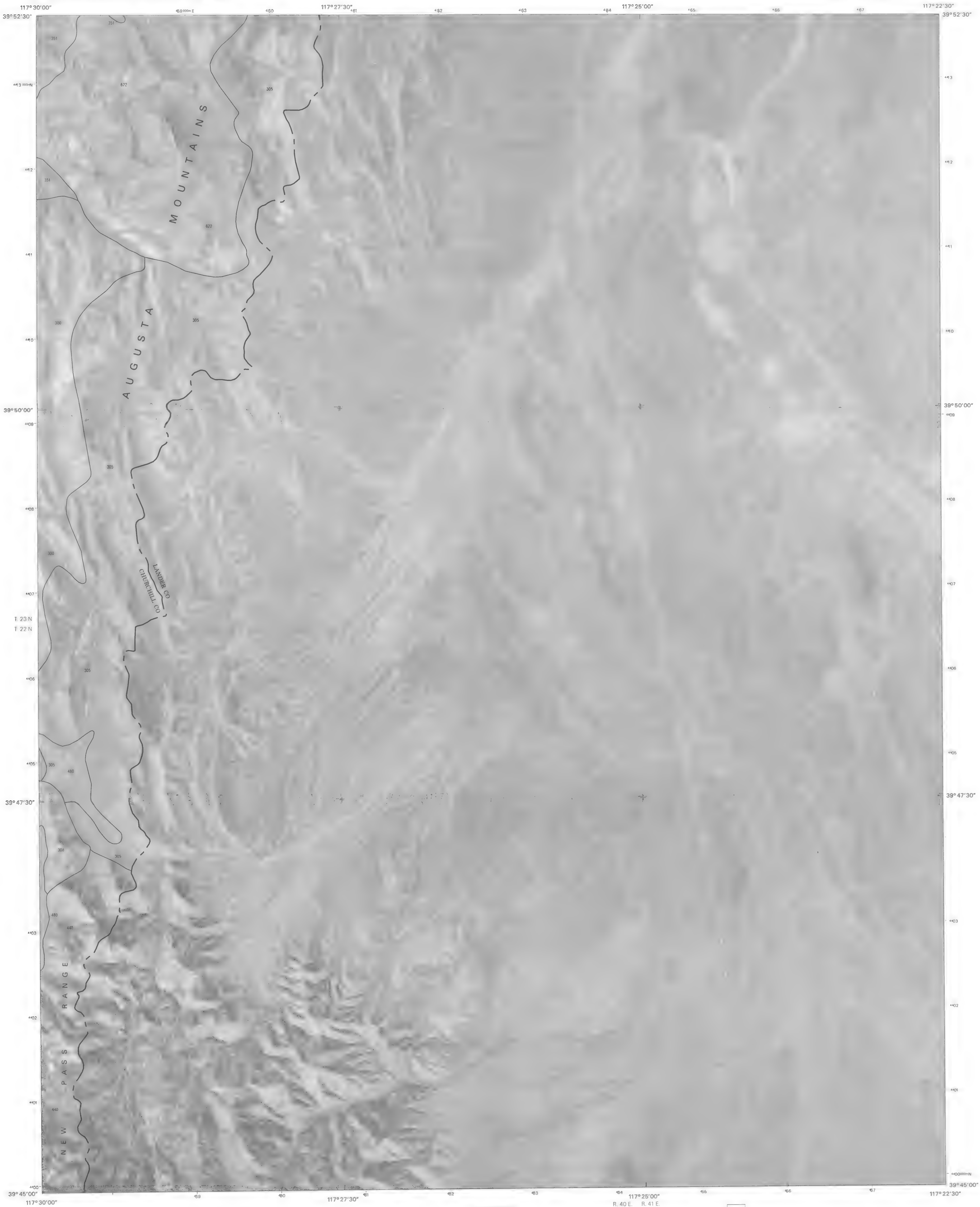


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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11.



SHOSHONE MEADOWS SE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 37

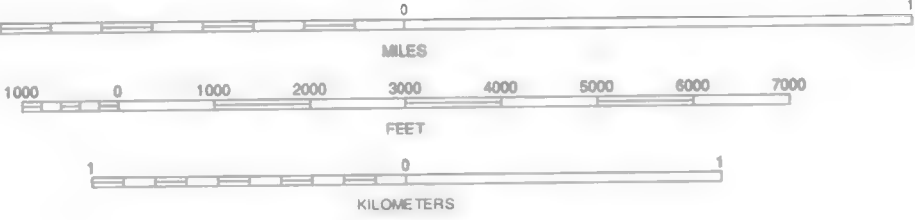


This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27). Clarke 1886 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11.



SCALE 1:24000



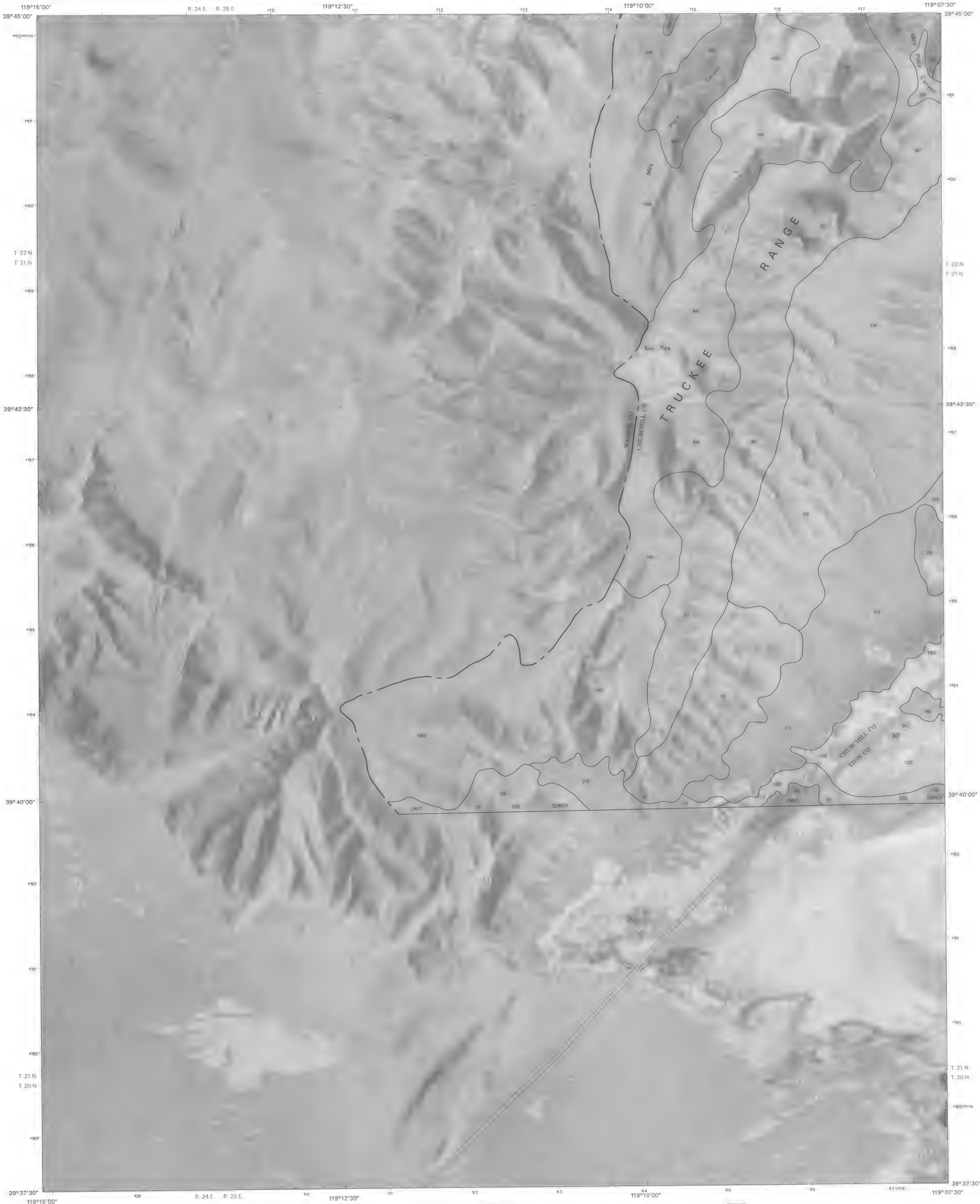
QUADRANGLE LOCATION

1	2	3	1 SHOSHONE MEADOWS NE
4	5	6	2 GILBERT CREEK NW
7	8	9	3 GILBERT CREEK NE
			4 SHOSHONE MEADOWS SE
			5 GILBERT CREEK SE
			6 NEW PASS WELL
			7 NEW PASS PEAK
			8 MOUNT AIRY NE

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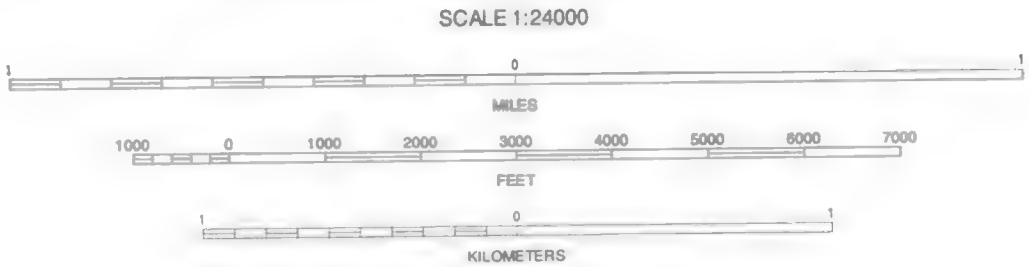
GILBERT CREEK SW, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 38





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North American Datum of 1927 (NAD27). Clarke 1886 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



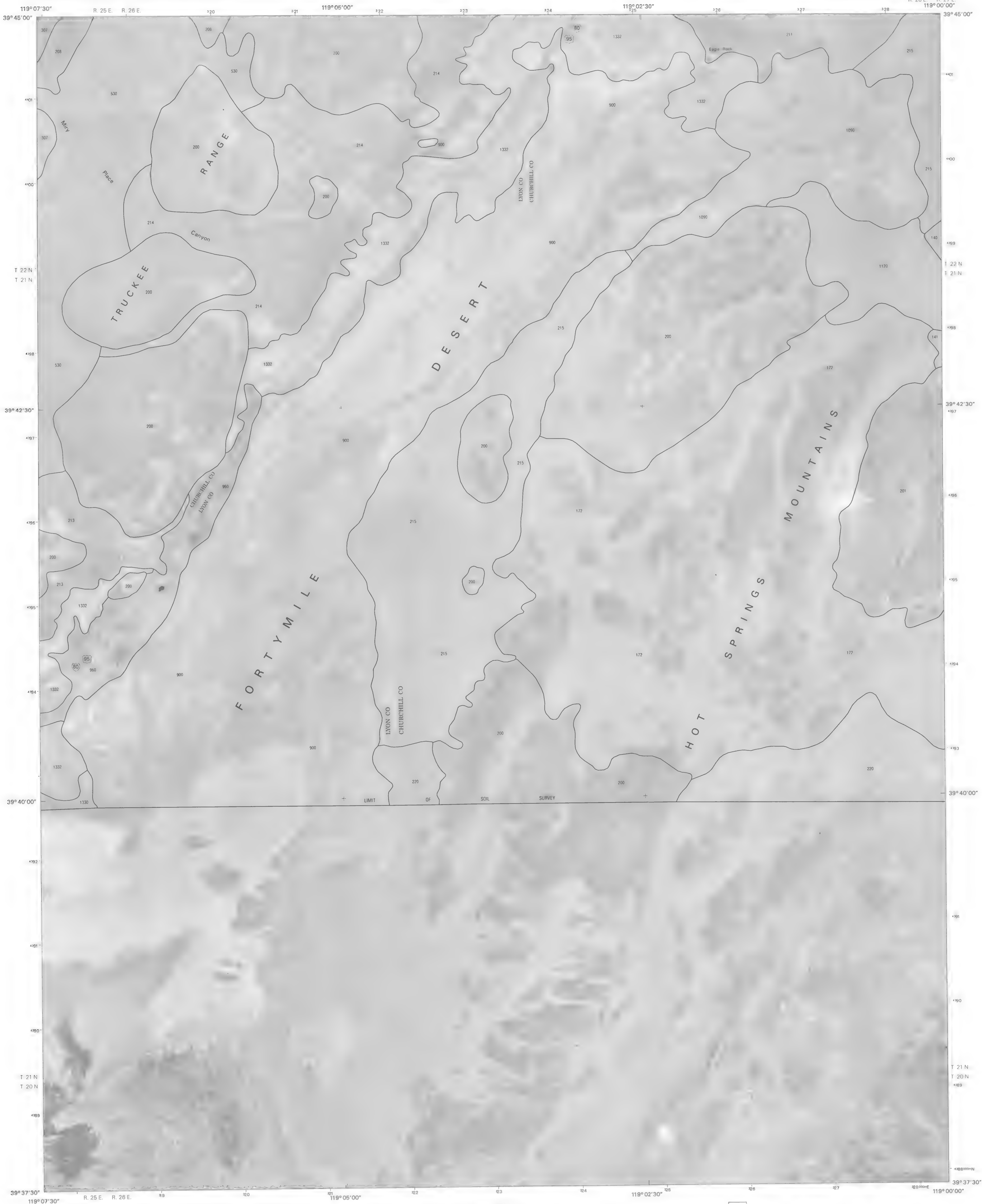
QUADRANGLE LOCATION

1	2	3	1 NIXON
			2 JUNIPER PEAK
			3 HOT SPRINGS FLAT
4		5	4 WADSWORTH
			5 EAGLE ROCK
			6 FERNLEY WEST
			7 FERNLEY EAST
6	7	8	8 HAZEN

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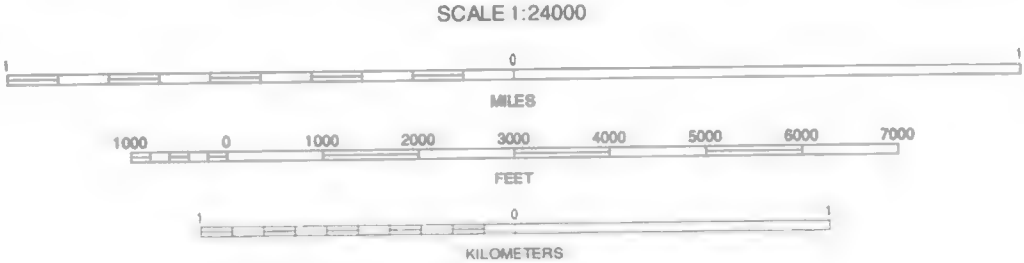
TWO TIPS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 39





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 JUNIPER PEAK
			2 HOT SPRINGS FLAT
4		5	3 DESERT PEAK
			4 TWO TIPS
			5 SODA LAKE NW
6	7	8	6 FERNLEY EAST
			7 HAZEN
			8 SODA LAKE WEST

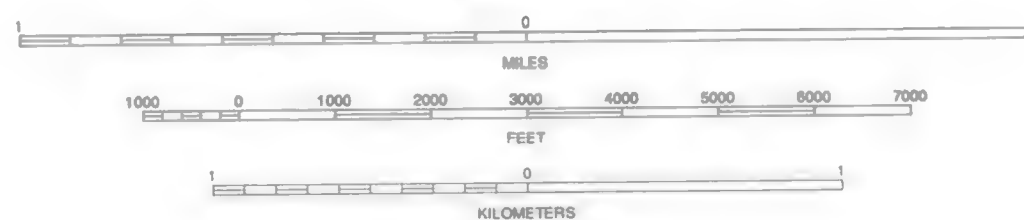
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EAGLE ROCK, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 40

North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

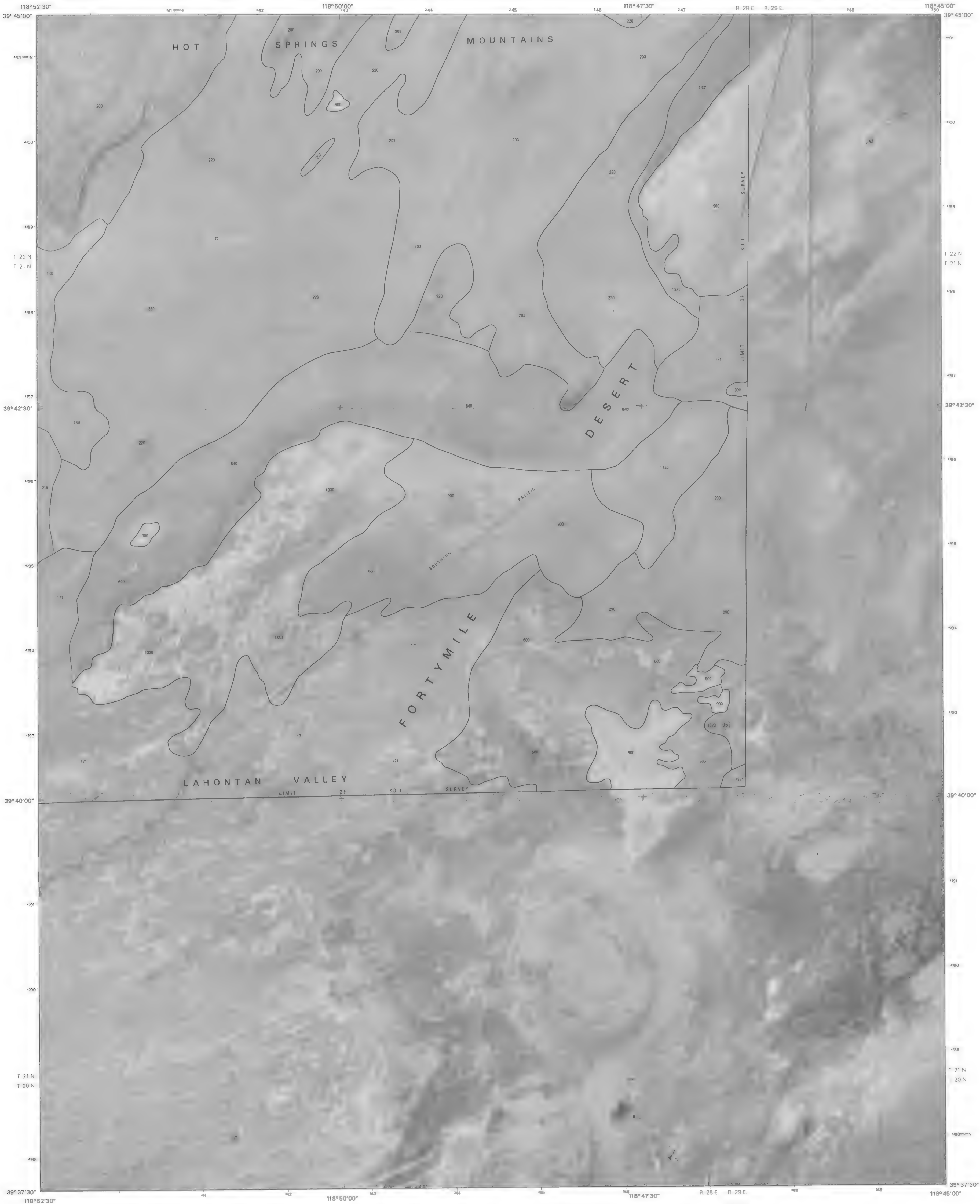


SODA LAKE NW, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 41

1	2	3	1 HOT SPRINGS FLAT
			2 DESERT PEAK
			3 PARRAN
4		5	4 EAGLE ROCK
			5 UPSAL HOGBACK
			6 HAZEN
6	7	8	7 SODALAKE WEST
			8 SODALAKE EAST

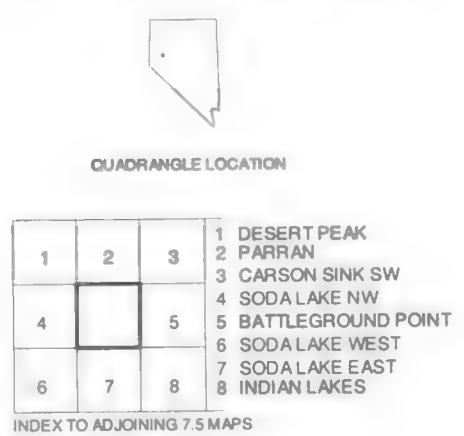
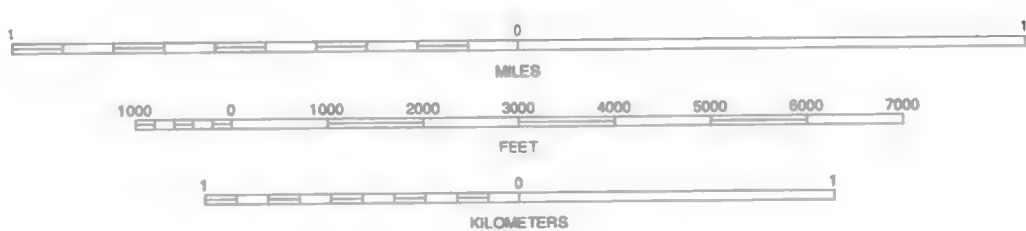
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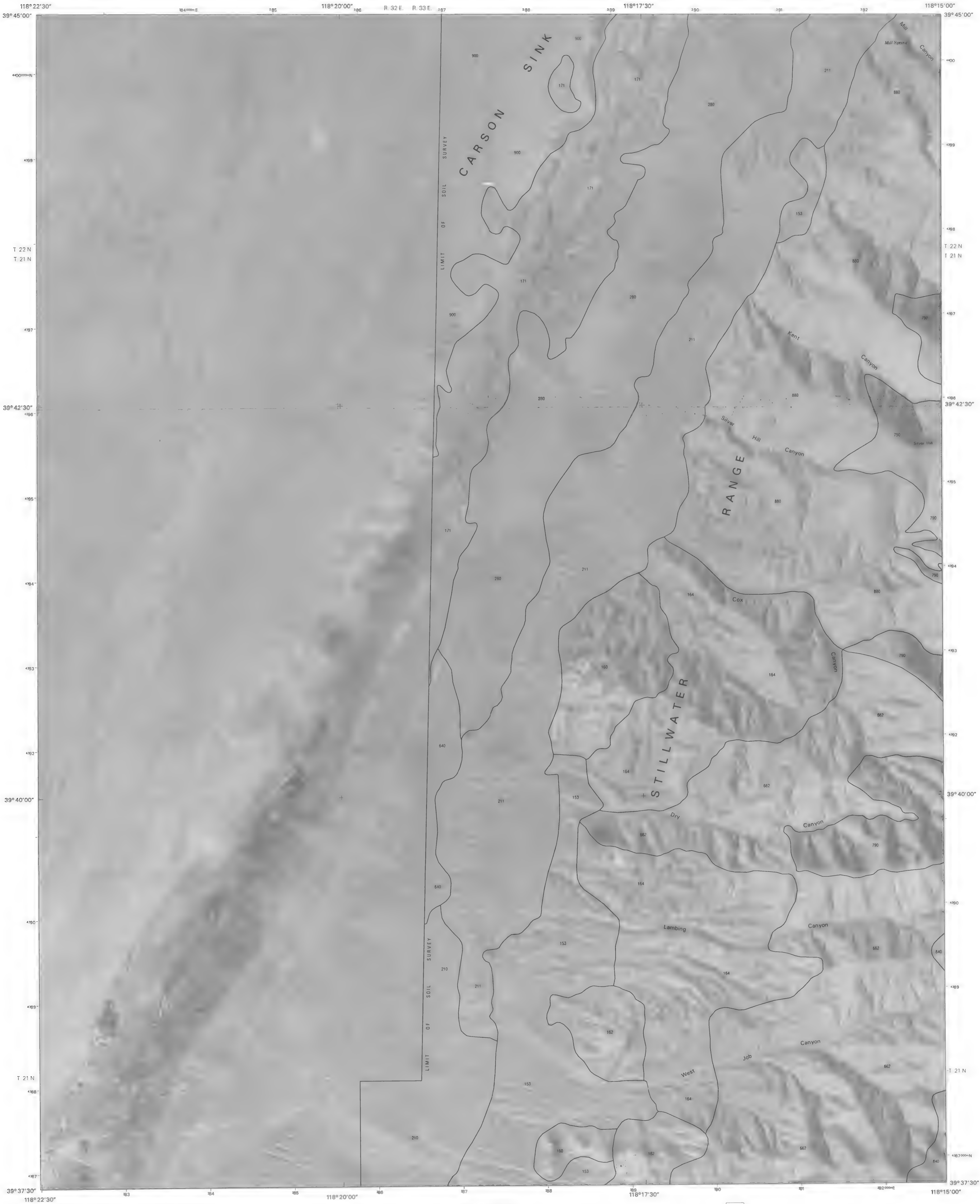


This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



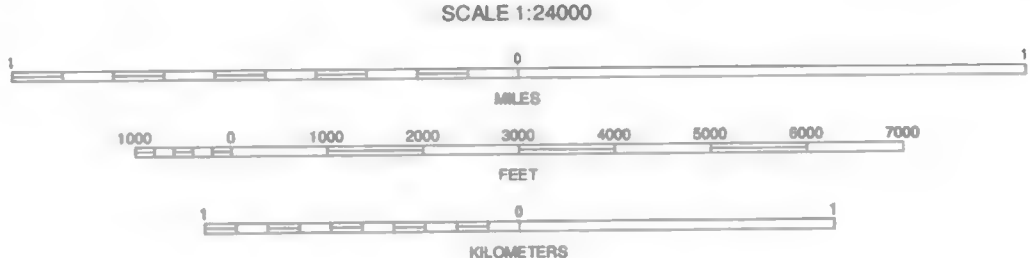
UPSAL HOGBACK, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 42



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

N  
↑  
Scale



QUADRANGLE LOCATION

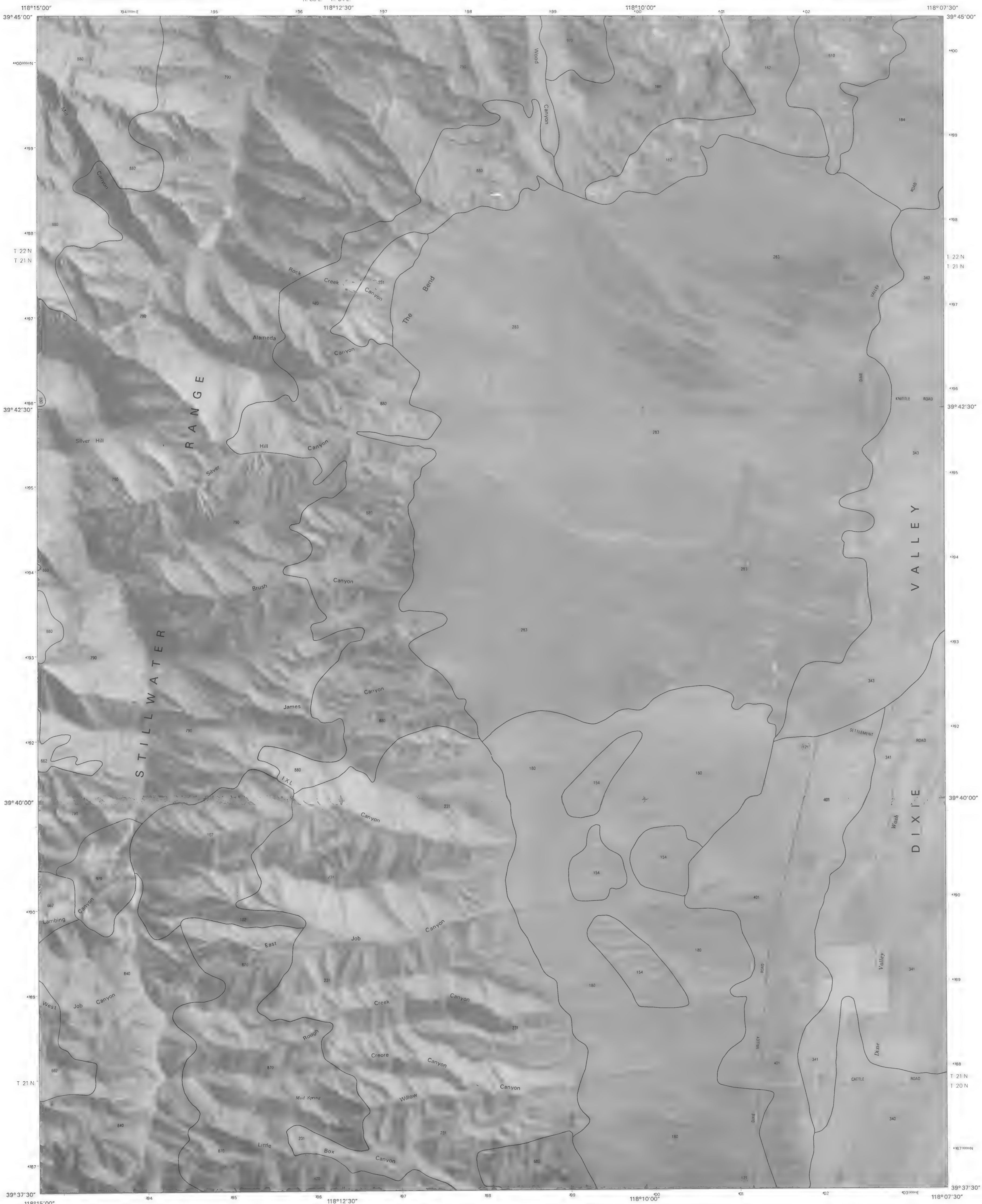
1	2	3
4	5	6
7	8	9

1 LONE ROCK SW  
2 LONE ROCK SE  
3 FONDWAY CANYON  
4 PINTAIL BAY  
5 I XL CANYON  
6 FOXTAIL LAKE  
7 TABLE MOUNTAIN  
8 JOB PEAK

INDEX TO ADJOINING 7.5 MAPS

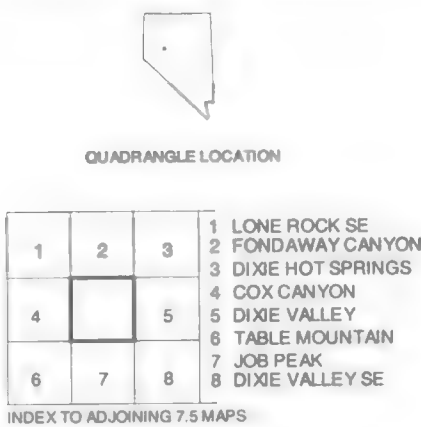
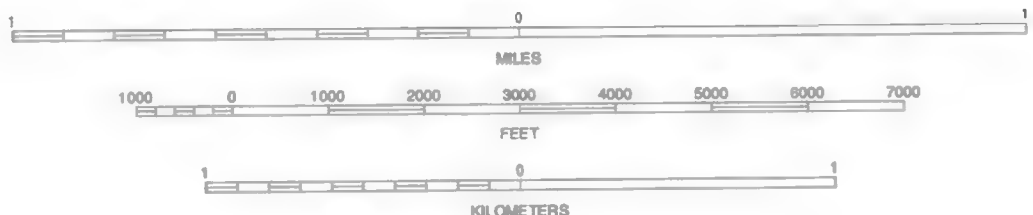
COX CANYON, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 43



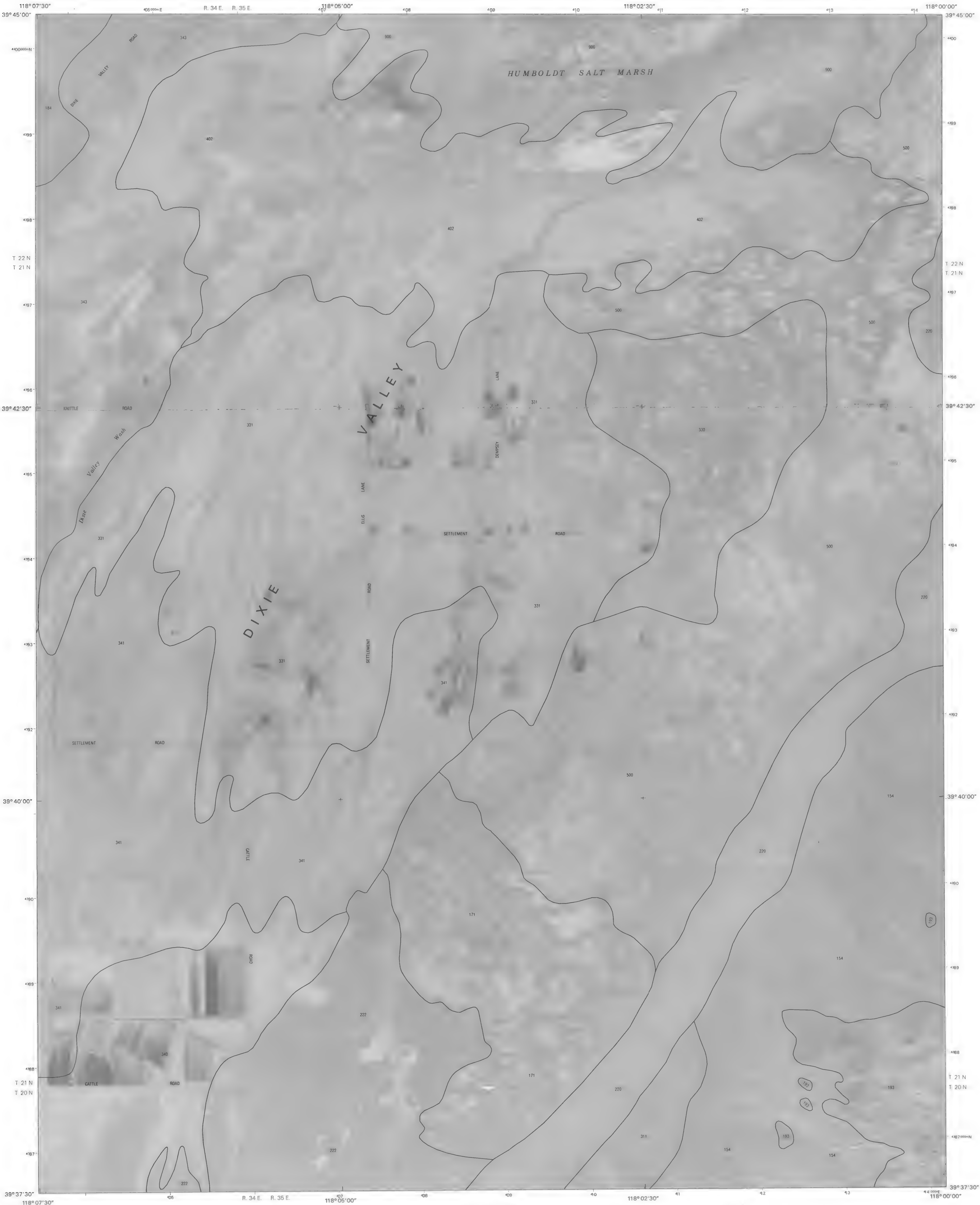


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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

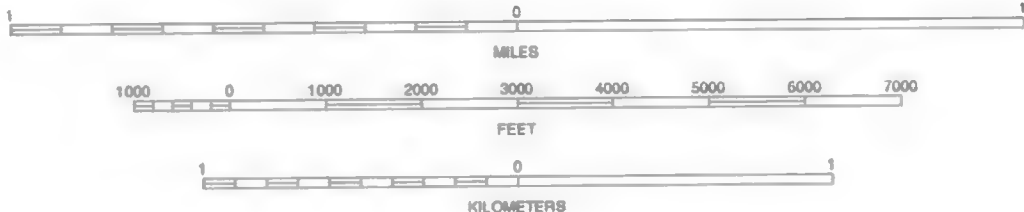


I X L CANYON, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 44



This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

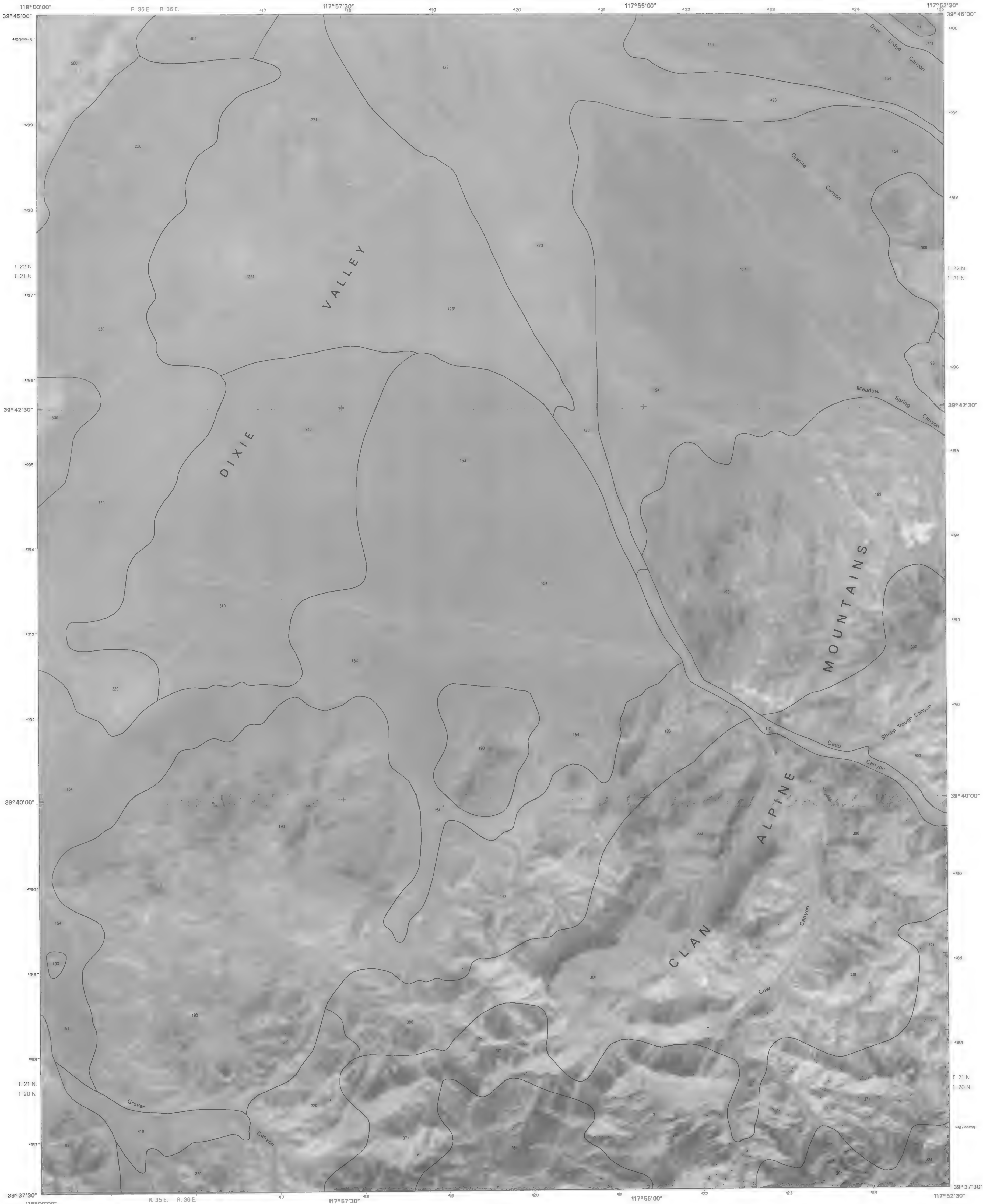


1	2	3	1 FONDABAY CANYON
4	5	6	2 DIXIE HOT SPRINGS
7	8	9	3 HUMBOLDT SALT MARSH
10	11	12	4 XL CANYON
13	14	15	5 COW CANYON
16	17	18	6 JOB PEAK
19	20	21	7 DIXIE VALLEY SE
22	23	24	8 MOUNT AUGUSTA

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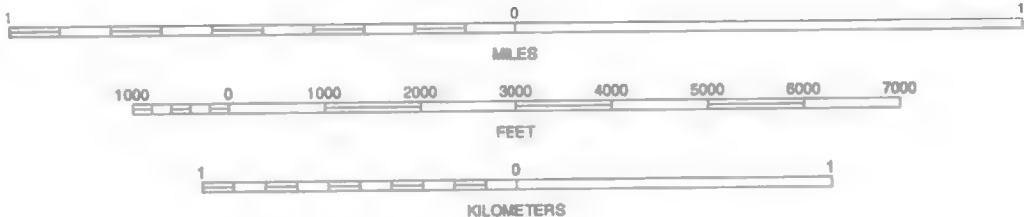
DIXIE VALLEY, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 45





This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 DIXIE HOT SPRINGS
4	5	2 HUMBOLDT SALT MARSH	3 BERNICE CANYON
6	7	4 DIXIE VALLEY	5 BYERS CANYON
		6 DIXIE VALLEY SE	7 MOUNT AUGUSTA
		8 CLAN ALPINE RANCH	

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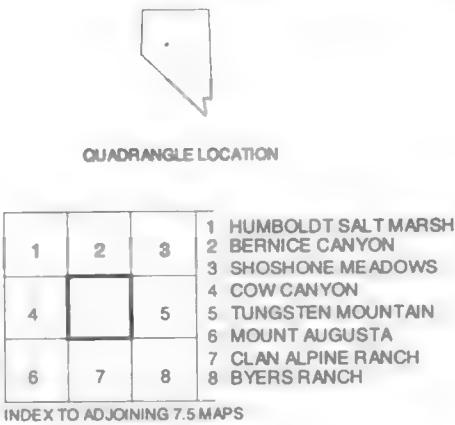
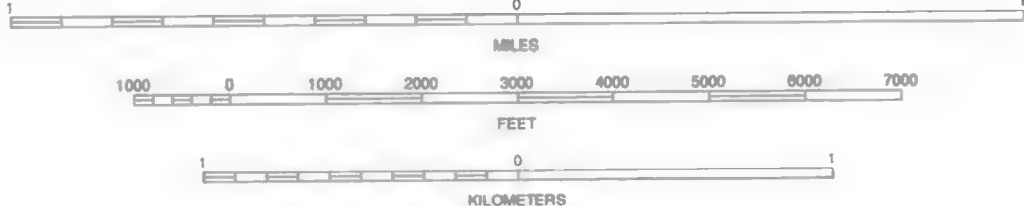
COW CANYON, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 46





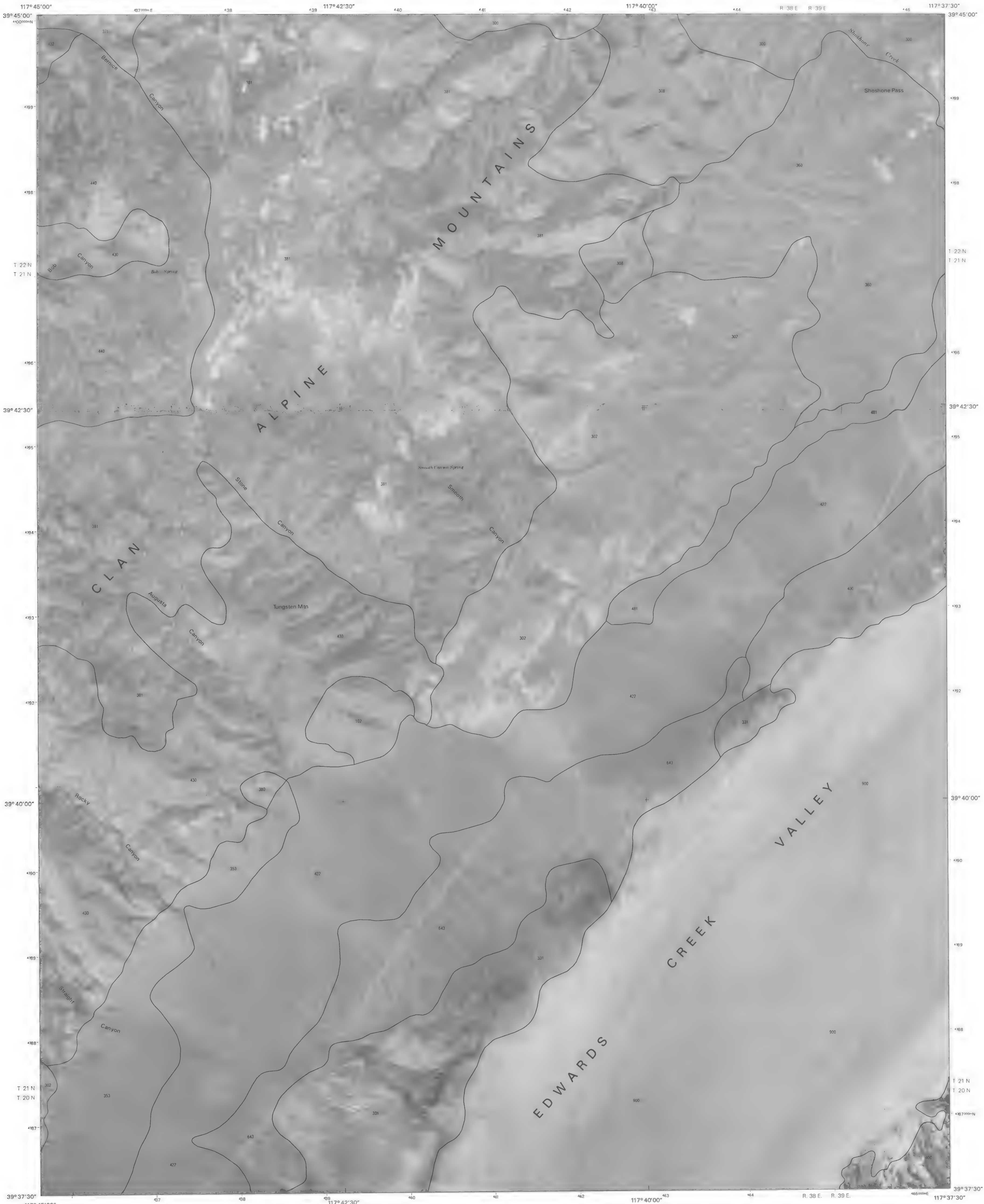
This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



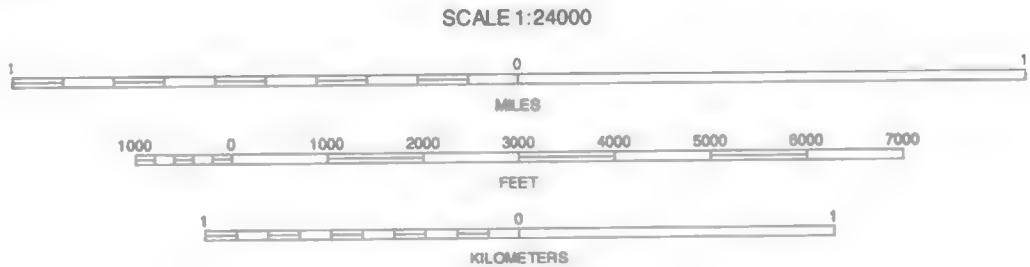
BYERS CANYON, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 47





This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



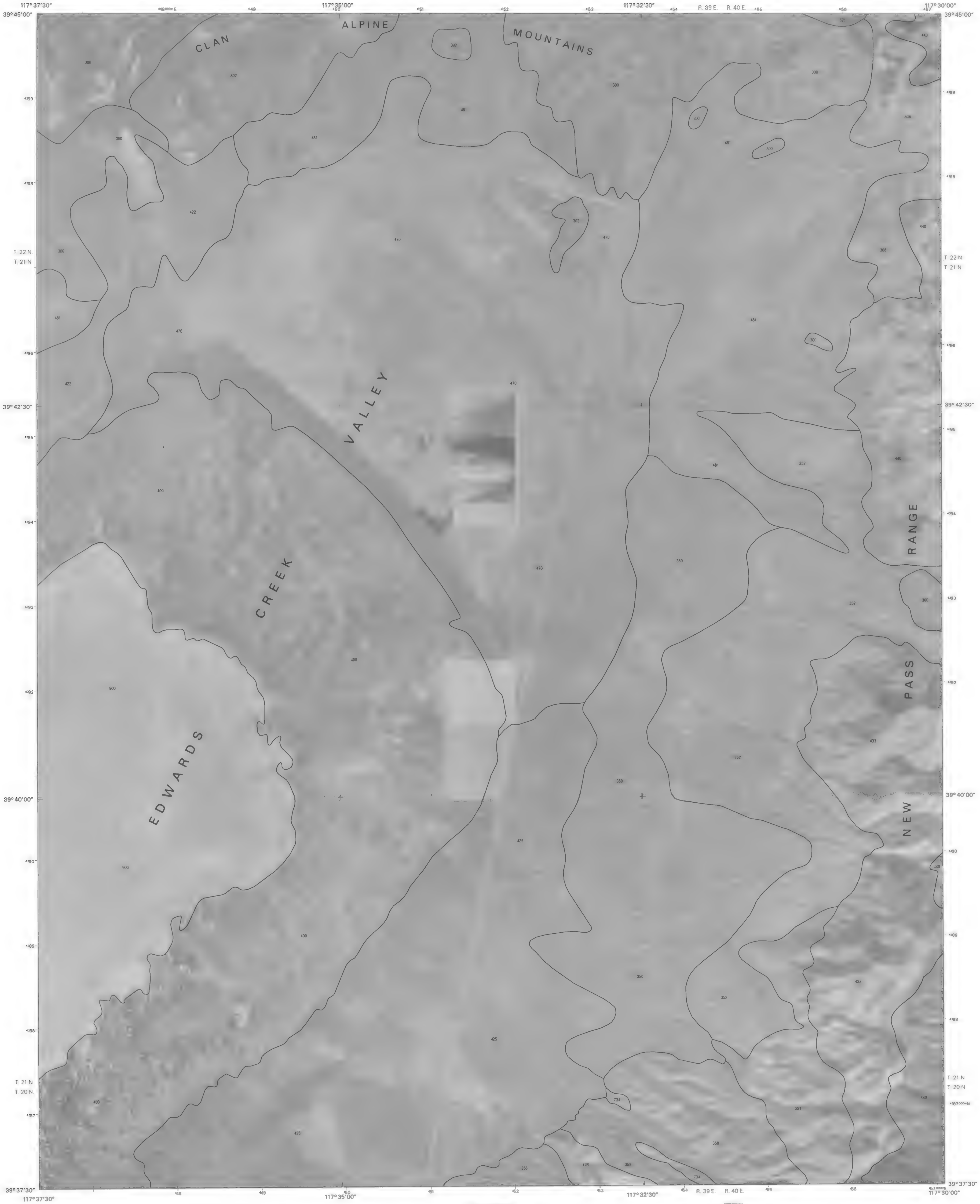
QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	9

- 1 BERNICE CANYON
- 2 SHOSHONE MEADOWS
- 3 SHOSHONE MEADOWS SE
- 4 DYERS CANYON
- 5 NEW PASS WELL
- 6 CLAN ALPINE RANCH
- 7 DYERS RANCH
- 8 NEW PASS

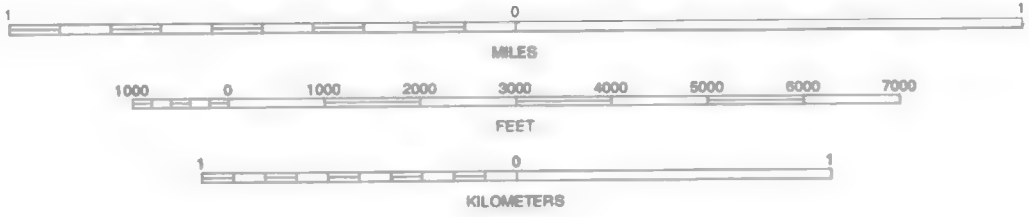
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TUNGSTEN MOUNTAIN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 48



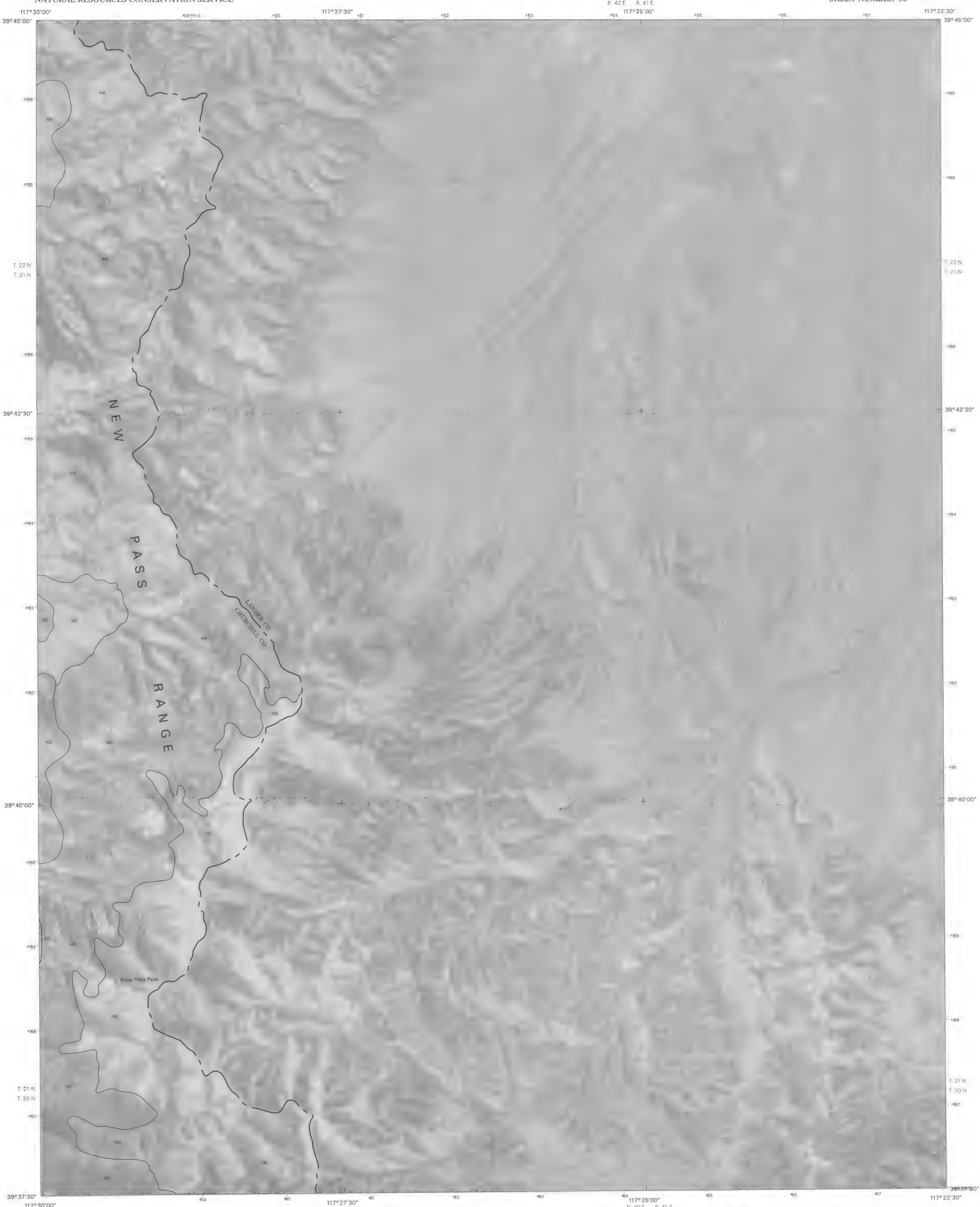
This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



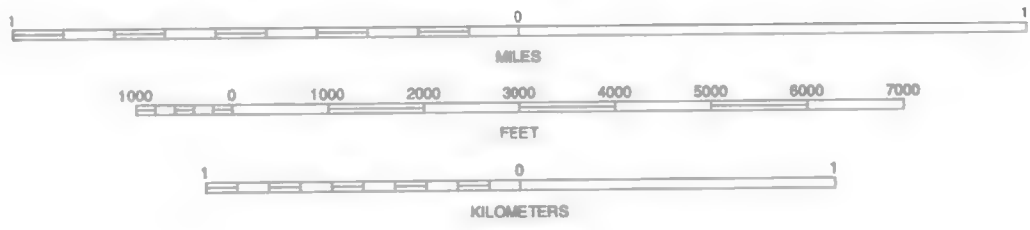
NEW PASS WELL, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 49





This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

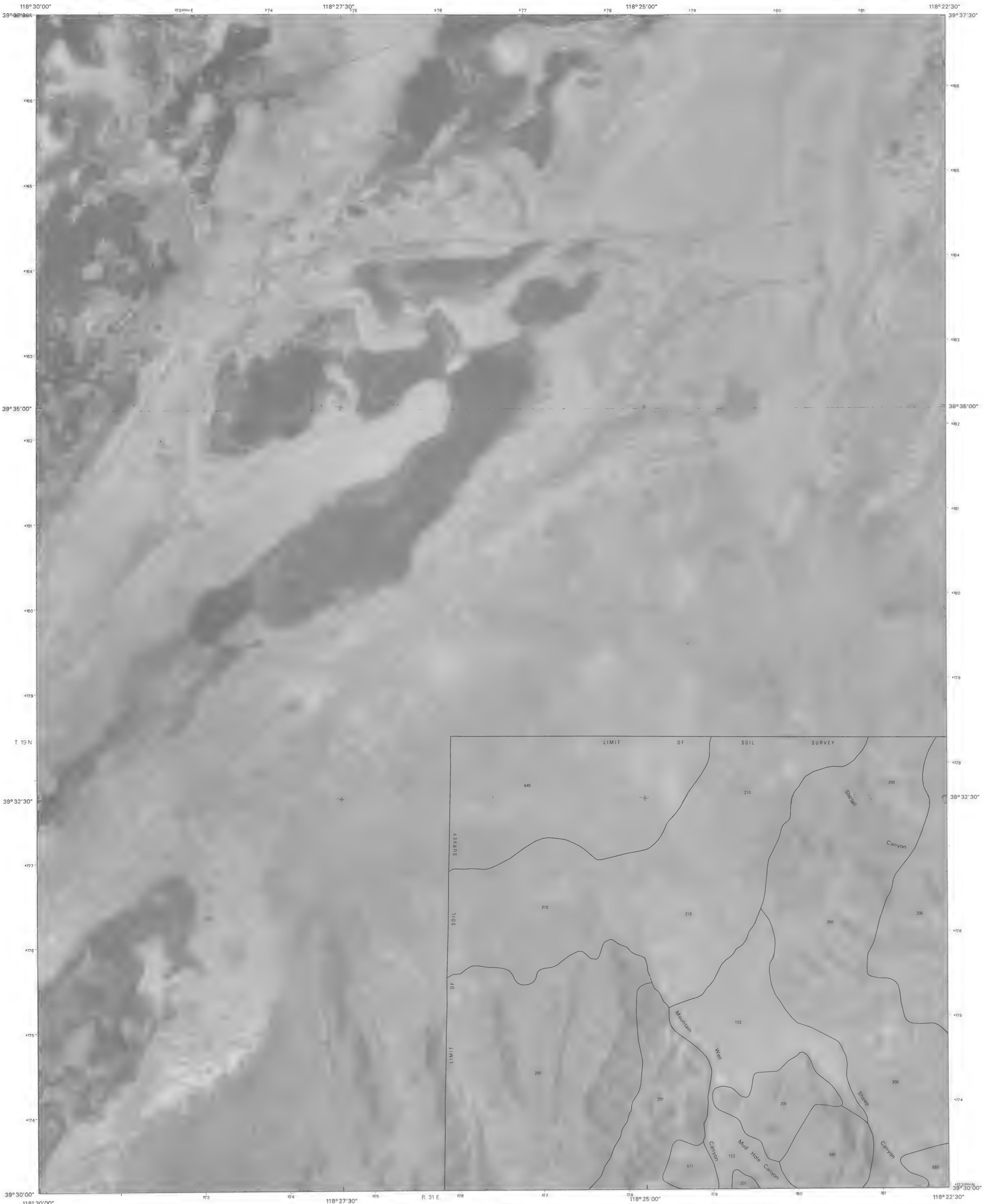


QUADRANGLE LOCATION

1	2	3	1 SHOSHONE MEADOWS SE
4	5	6	2 GILBERT CREEK SW
7	8	9	3 GILBERT CREEK SE
10	11	12	4 NEW PASS WELL
13	14	15	5 MOUNT AIRYNE
16	17	18	6 NEW PASS
19	20	21	7 MOUNT AIRY
22	23	24	8 MOUNT AIRY MESA

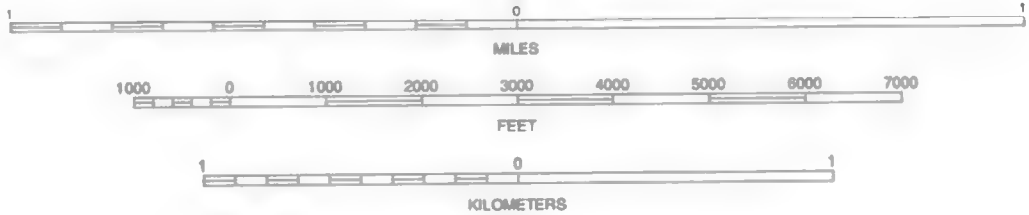
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NEW PASS PEAK, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 50



This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



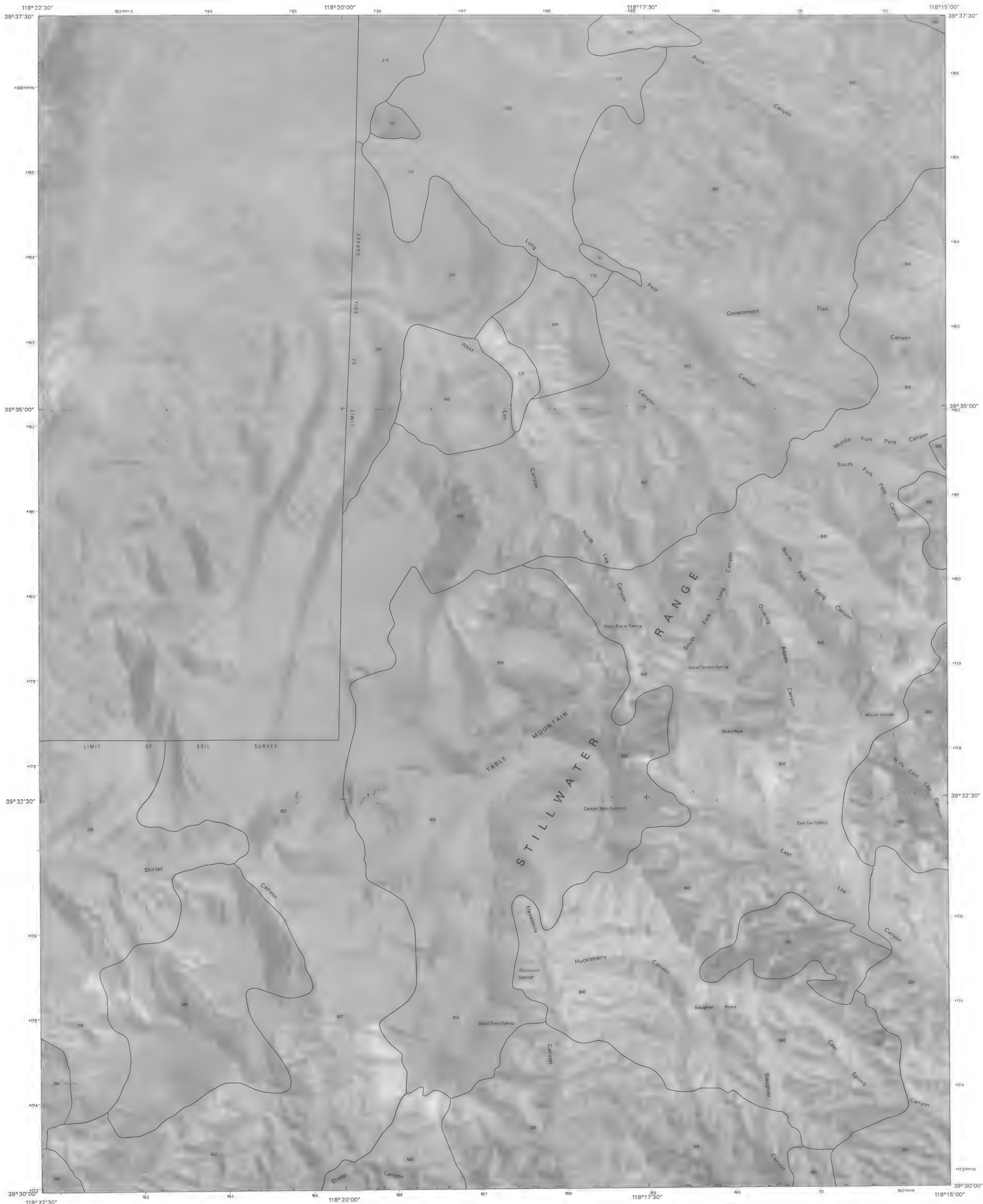
QUADRANGLE LOCATION

1	2	3	1 STILLWATER NE
			2 PINTAIL BAY
			3 COX CANYON
4		5	4 STILLWATER
			5 TABLE MOUNTAIN
			6 LAHONTAN MOUNTAINS
6	7	8	7 DIAMOND CANYON
			8 LA PLATA CANYON

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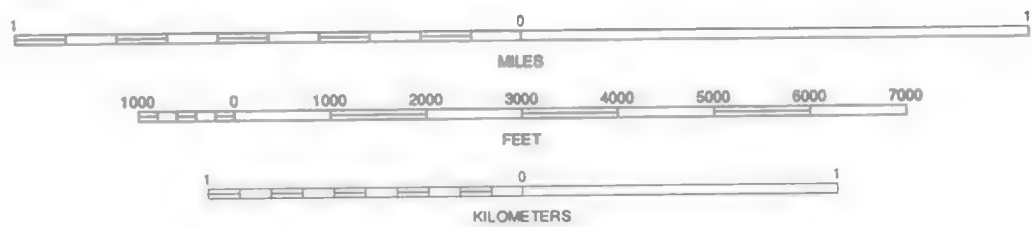
FOXTAIL LAKE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 51





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1. PINTAIL BAY
			2. COX CANYON
			3. XL CANYON
4		5	4. FOXTAIL LAKE
			5. JOB PEAK
			6. DIAMOND CANYON
			7. LA PLATA CANYON
6	7	8	8. PIROUETTE MOUNTAIN

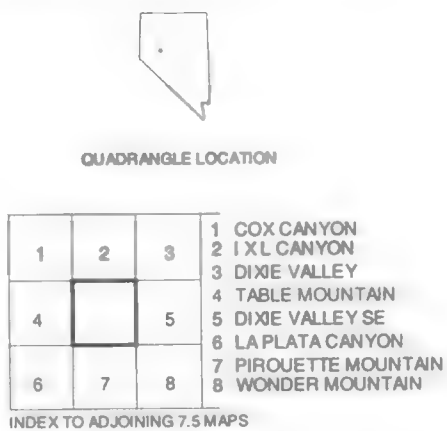
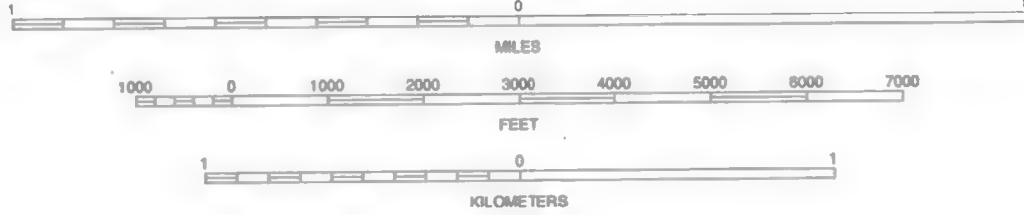
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TABLE MOUNTAIN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 52



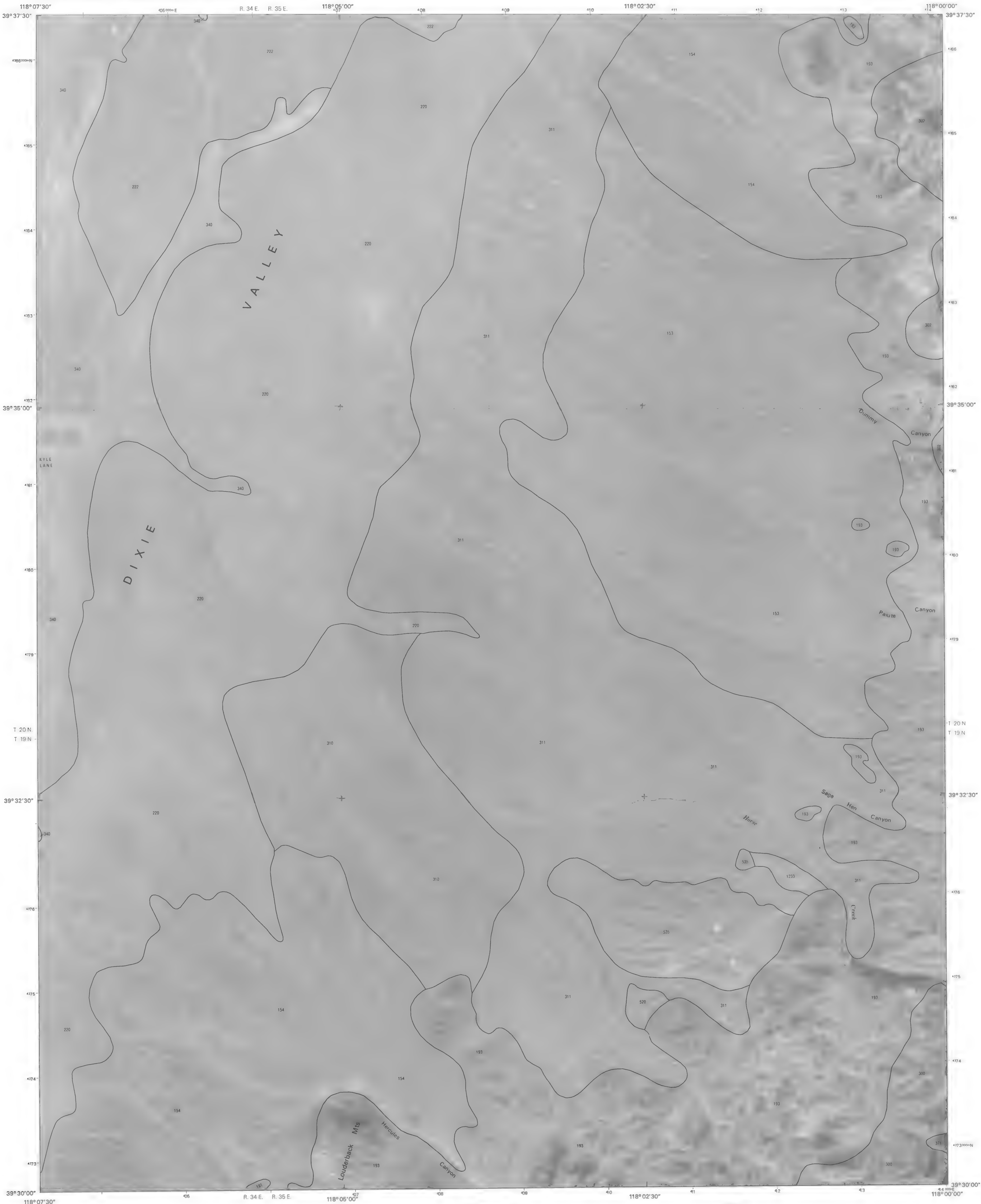
This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



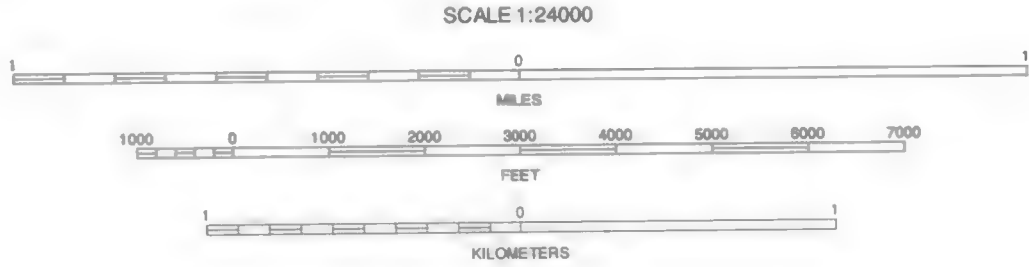
JOB PEAK, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 53





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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	9

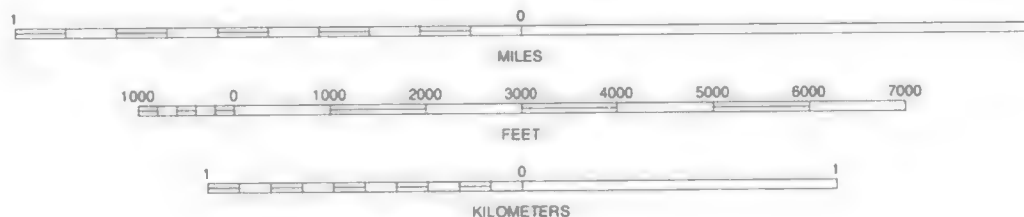
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DIXIE VALLEY SE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 54



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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid. 1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

MOUNT AUGUSTA, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 55

1	2	3	1 DIXIE VALLEY
			2 COW CANYON
			3 BYERS CANYON
4		5	4 DIXIE VALLEY SE
			5 CLAN ALPINE RANCH
			6 WONDER MOUNTAIN
6	7	8	7 CAMP CREEK CANYON
			8 COLD SPRINGS

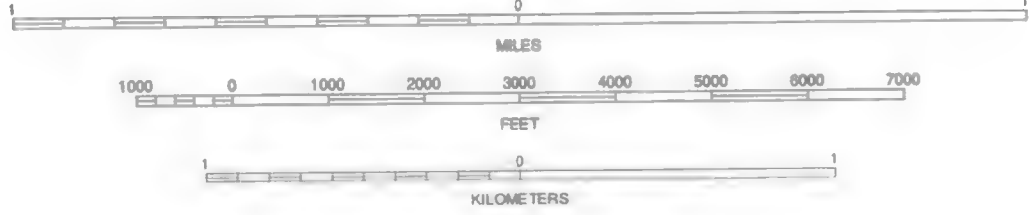
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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid. 1000-meter ticks: Universal Transverse Mercator, zone 11.

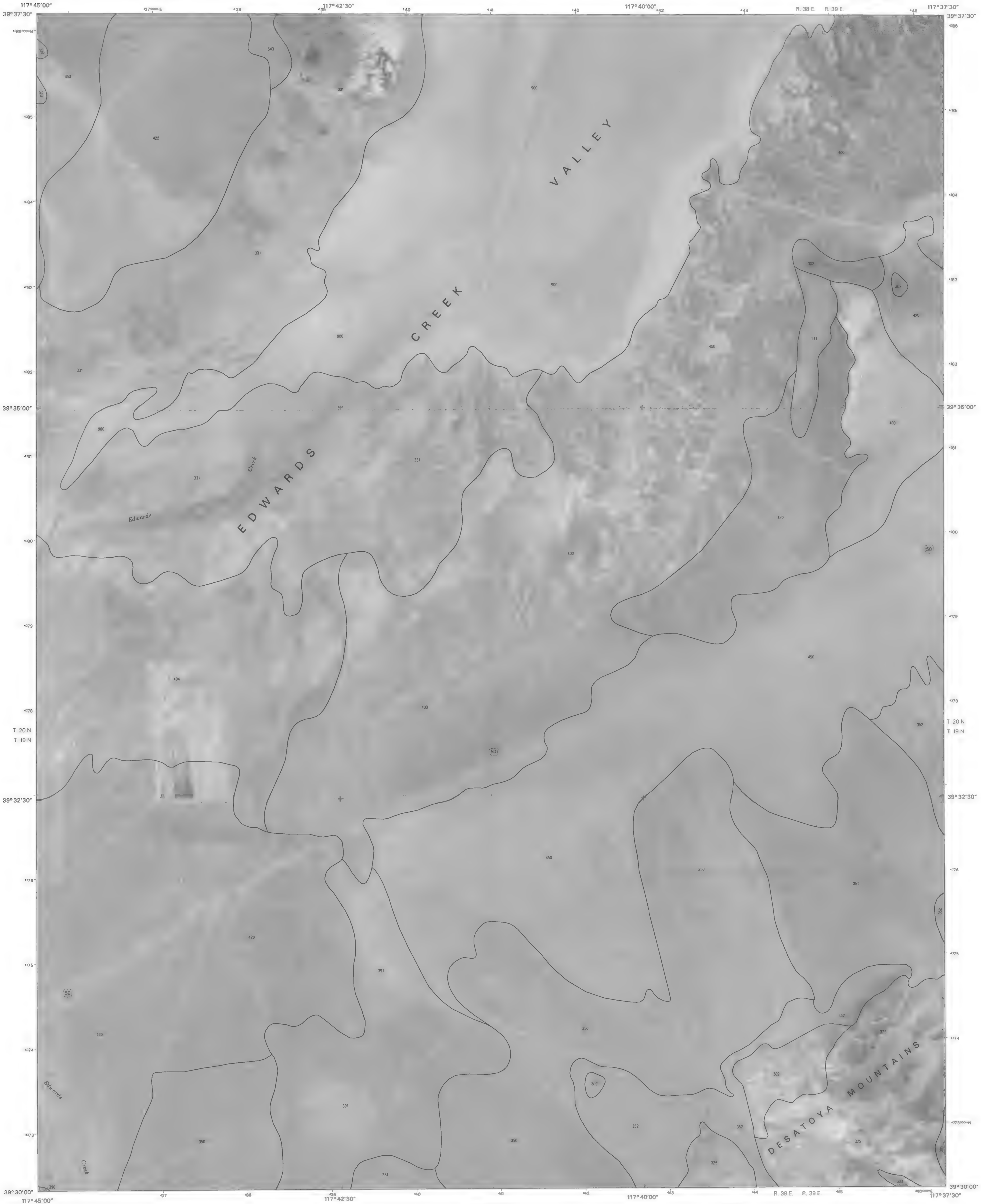


QUADRANGLE LOCATION

1	2	3	1 COW CANYON
4	5	6	2 BYERS CANYON
7	8	9	3 TUNGSTEN MOUNTAIN
10	11	12	4 MOUNT AUGUSTA
13	14	15	5 BYERS RANCH
16	17	18	6 CAMP CREEK CANYON
19	20	21	7 COLD SPRINGS
22	23	24	8 BASQUE SUMMIT

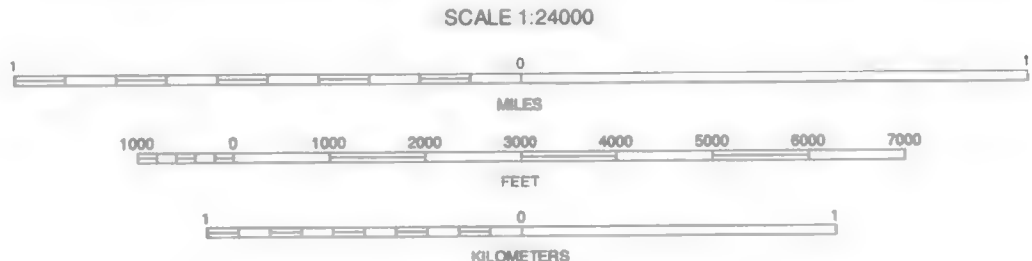
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CLAN ALPINE RANCH, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 56



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



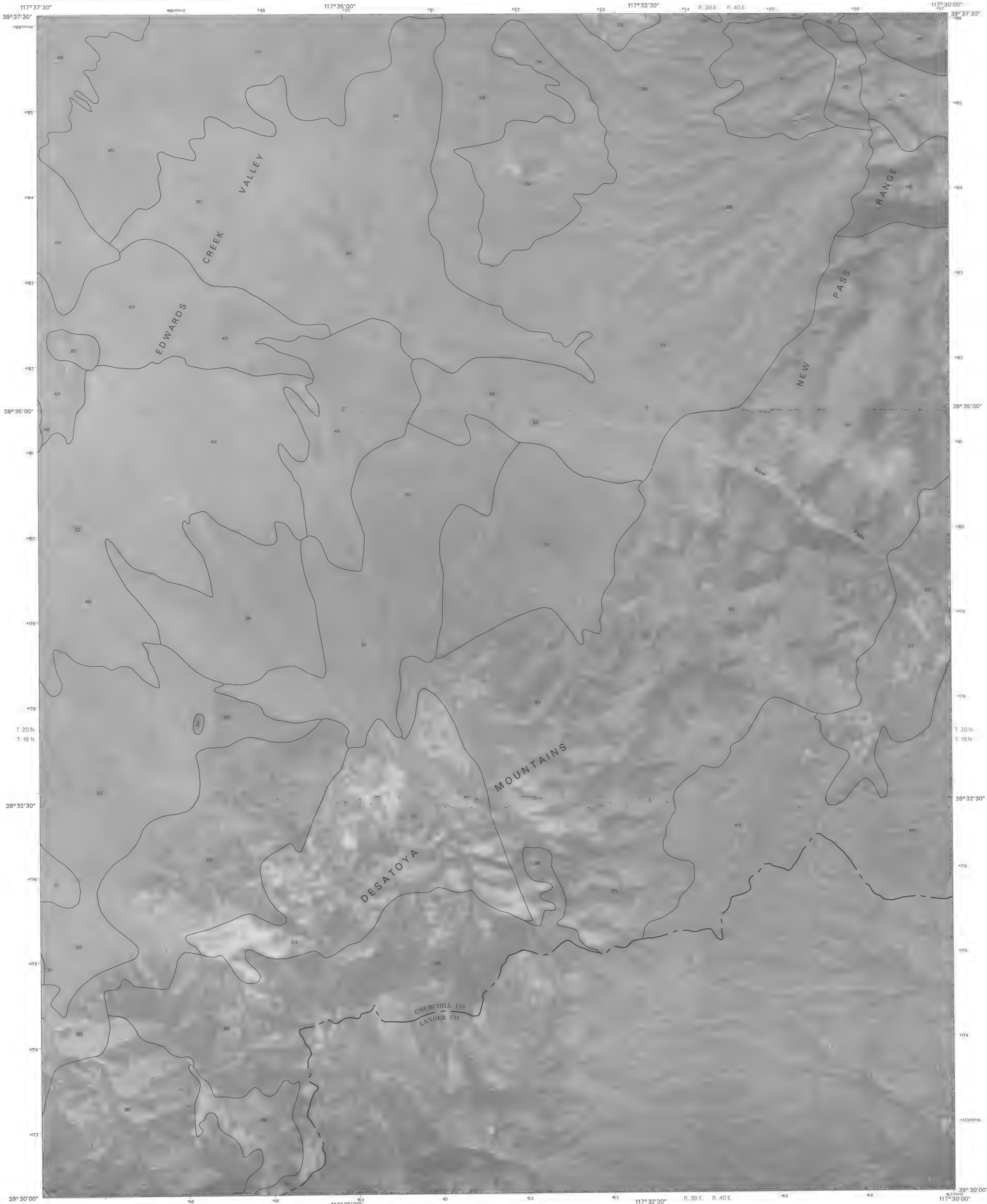
1	2	3
4	5	6
7	8	9

- 1 BYERS CANYON
- 2 TUNGSTEN MOUNTAIN
- 3 NEW PASS WELL
- 4 CLAN ALPINE RANCH
- 5 NEW PASS
- 6 COLD SPRINGS
- 7 BASQUE SUMMIT
- 8 CARROLL SUMMIT NE

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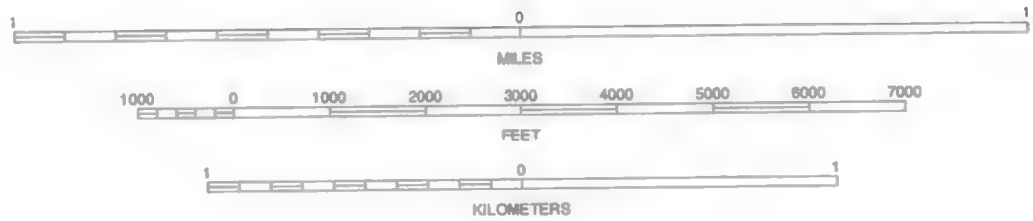
BYERS RANCH, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 57





This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

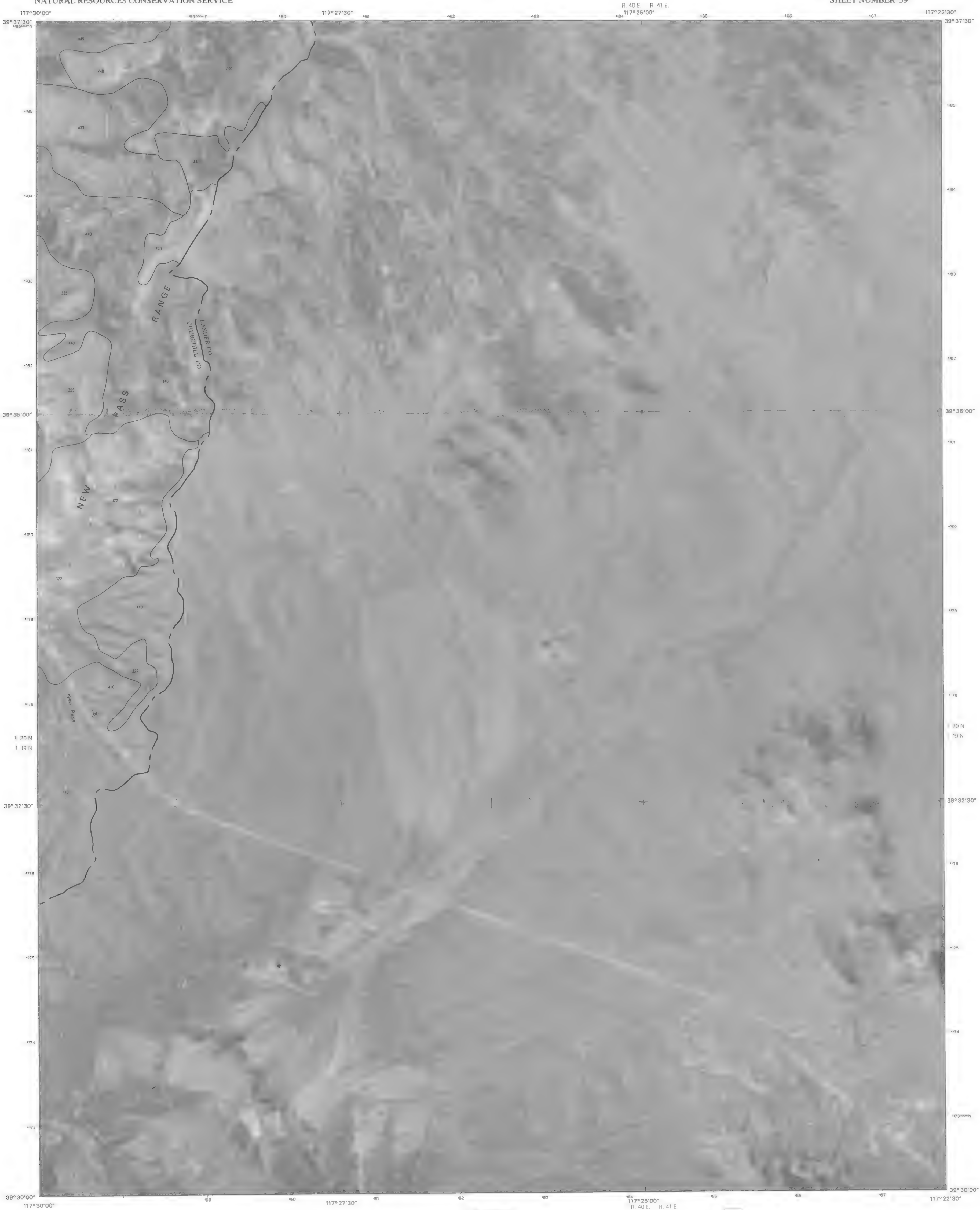
North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



1	2	3	1 TUNGSTEN MOUNTAIN
4	5	6	2 NEW PASS WELL
7	8	9	3 NEW PASS PEAK
10	11	12	4 BYERS RANCH
13	14	15	5 MOUNT AIRY
16	17	18	6 BASQUE SUMMIT
19	20	21	7 CARROLL SUMMIT NE
22	23	24	8 EMIGRANT PEAK

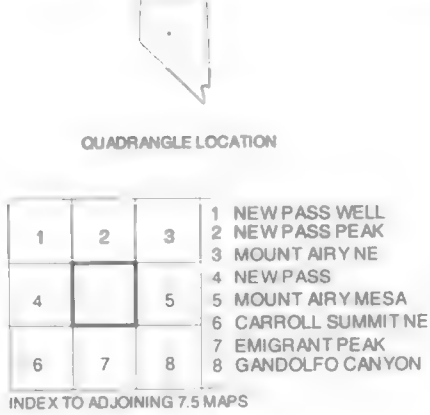
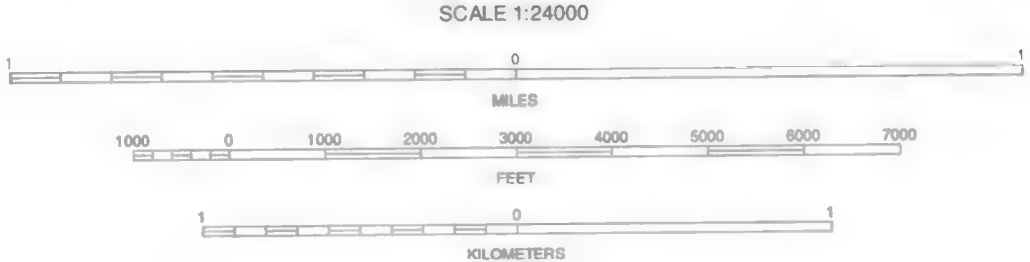
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NEW PASS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 58



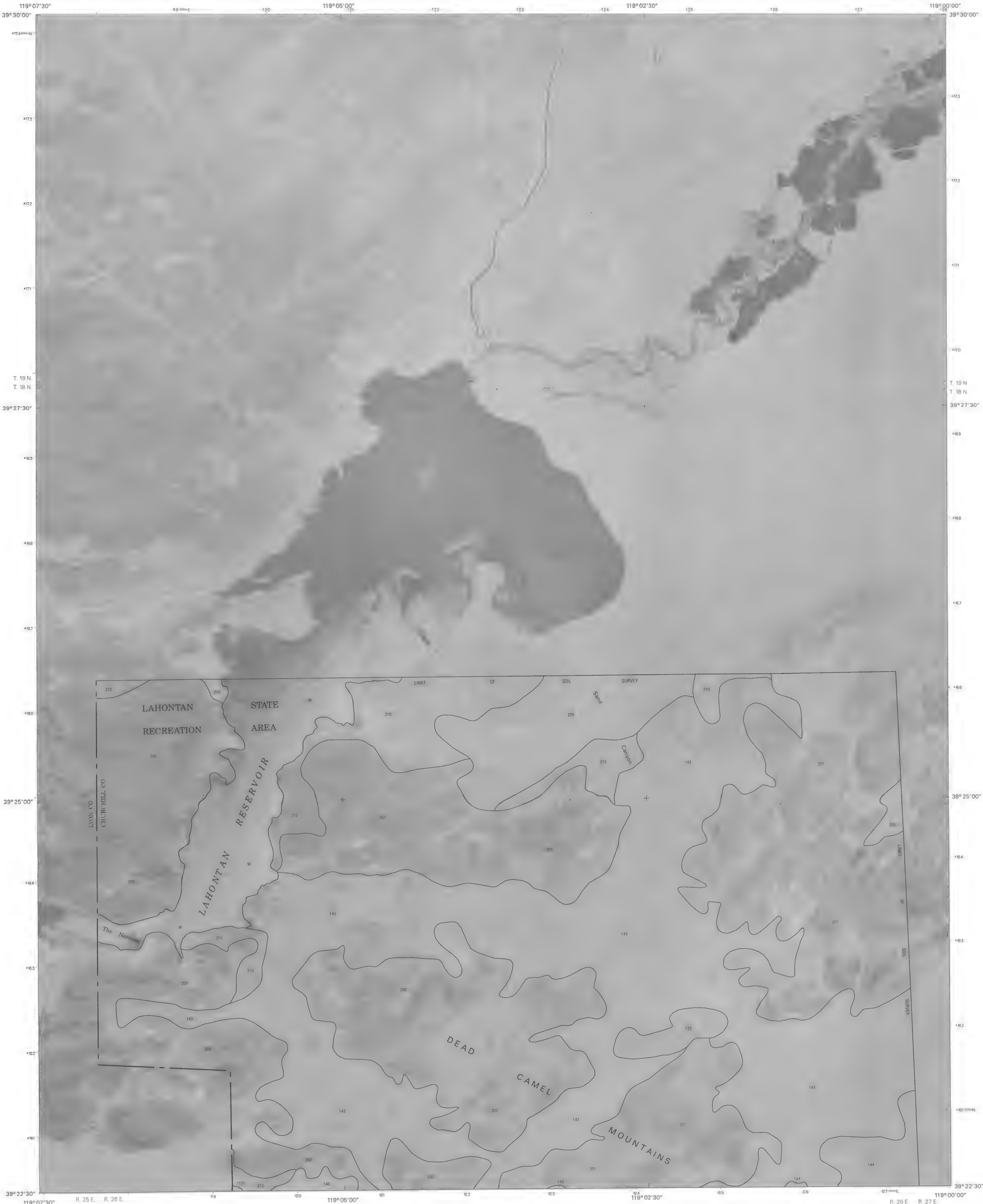
This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1978.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



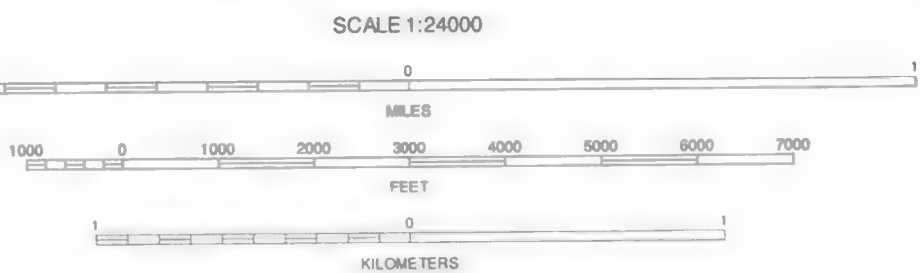
MOUNT AIRY, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 59





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

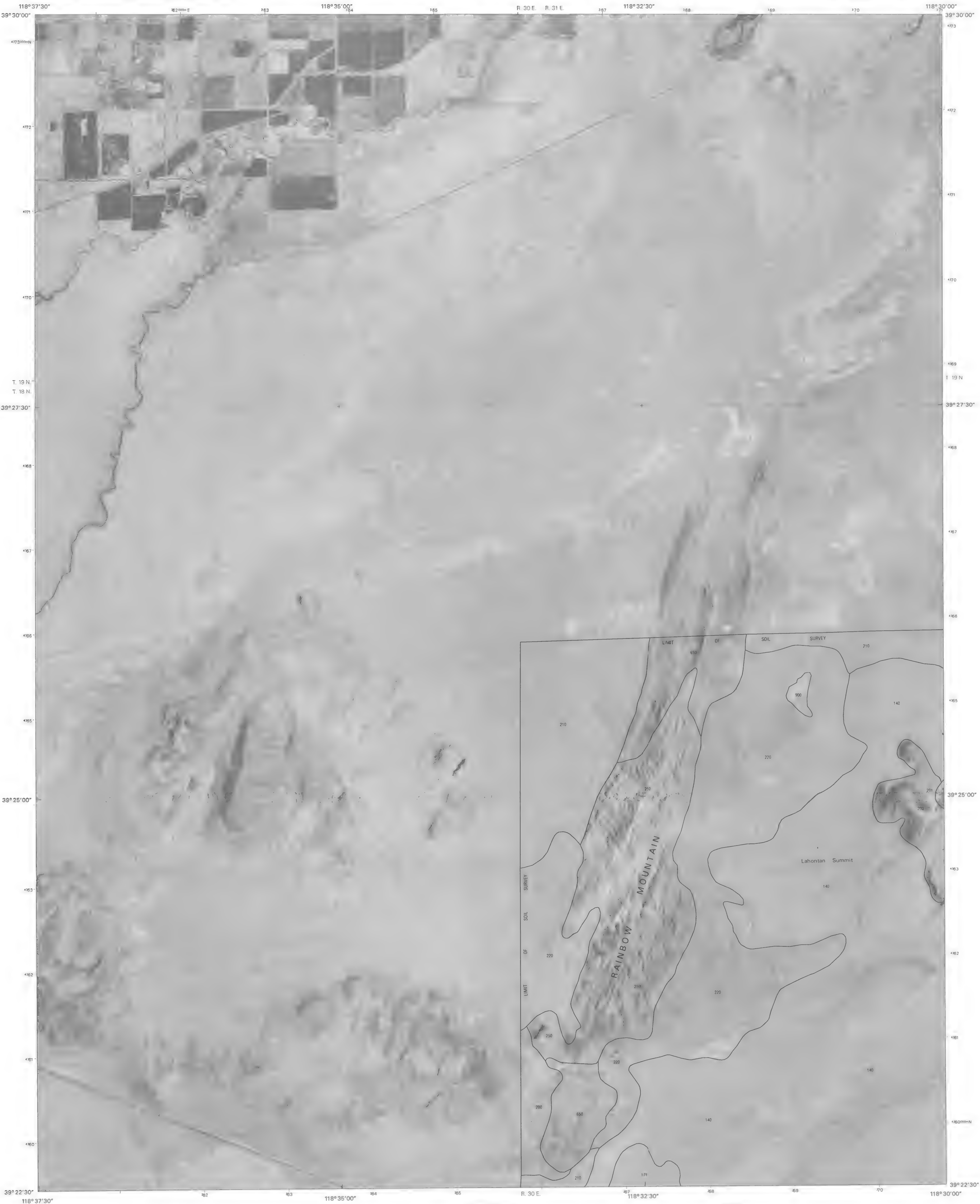


QUADRANGLE LOCATION

1	2	3	1 FERNLEY EAST
			2 HAZEN
			3 SODAL LAKE WEST
4		5	4 SILVER SPRINGS NORTH
			5 SHECKLER RESERVOIR
			6 SILVER SPRINGS SOUTH
6	7	8	7 HOOTEN WELL
			8 SALT CAVE

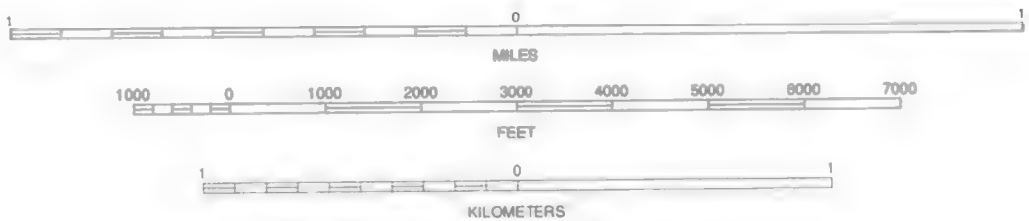
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LAHONTAN DAM, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 60



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

LAHONTAN MOUNTAINS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 61

1	2	3	1 INDIAN LAKES
4	5	6	2 STILL WATER
7	8	9	3 FOXTAIL LAKE
			4 GRIMES POINT
			5 DIAMOND CANYON
			6 CARSON LAKE
			7 BUNELUG MOUNTAINS
			8 FOURMILE FLAT

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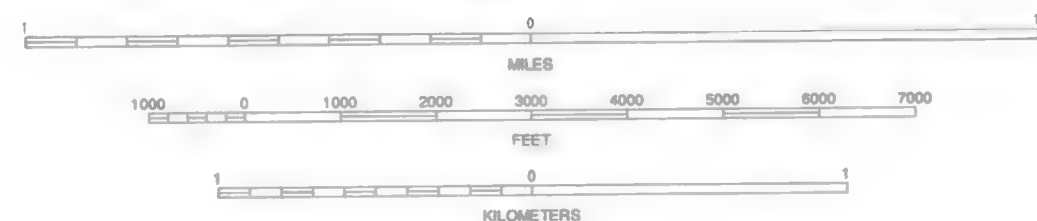






North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

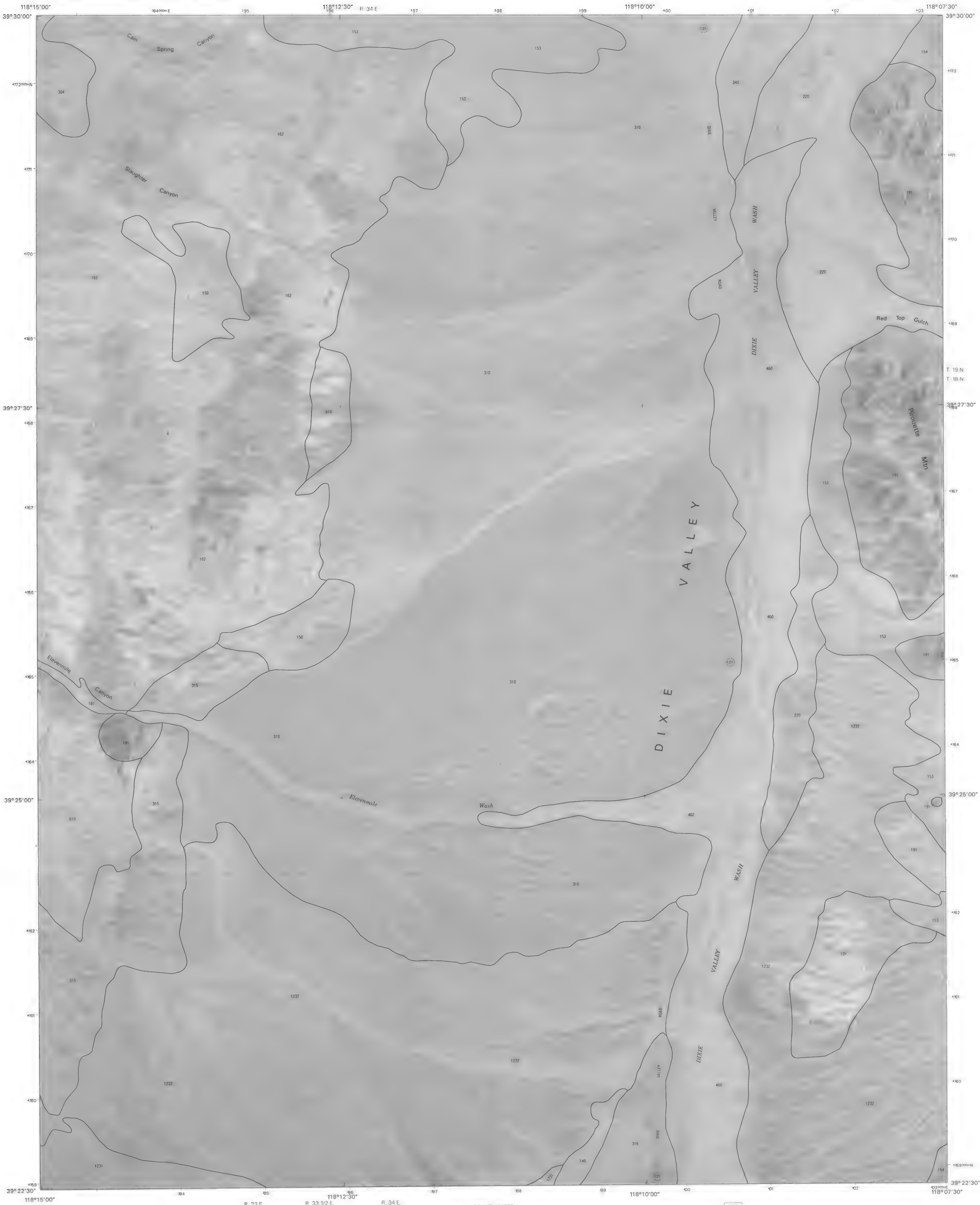
North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



LA PLATA CANYON, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 63

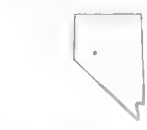
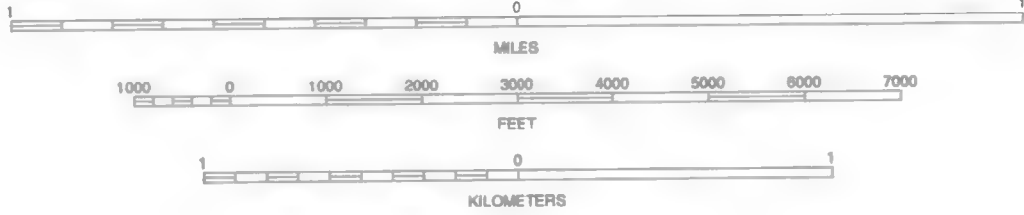
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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

PIROUETTE MOUNTAIN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 64

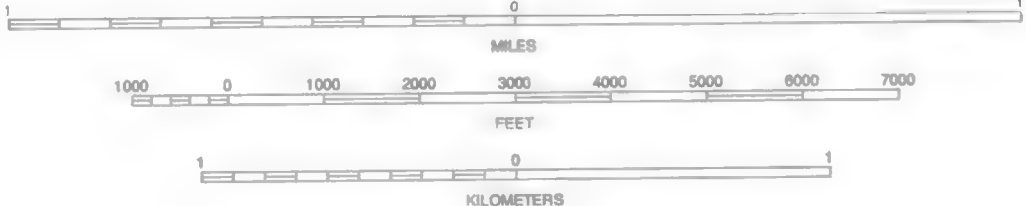
1	2	3	1 TABLE MOUNTAIN
4	5	6	2 JOB PEAK
7	8	9	3 DIXIE VALLEY SE
10	11	12	4 LA PLATA CANYON
13	14	15	5 WONDER MOUNTAIN
16	17	18	6 FRENCHMAN
19	20	21	7 DRUMM SUMMIT
22	23	24	8 WEST GATE

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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



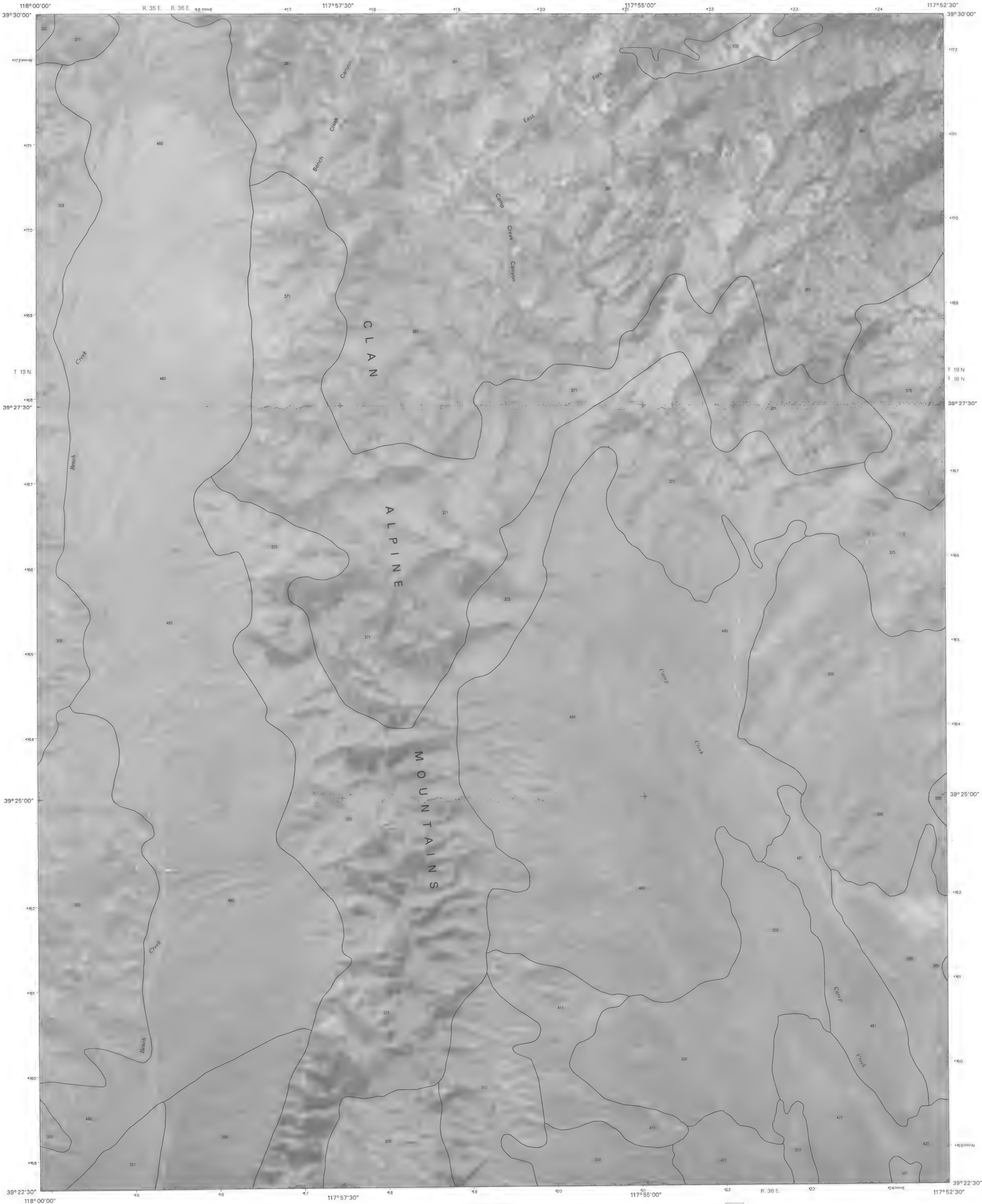
QUADRANGLE LOCATION

1	2	3	1 JOB PEAK
4	5	6	2 DIXIE VALLEY SE
7	8	9	3 MOUNT AUGUSTA
10	11	12	4 PIROUETTE MOUNTAIN
13	14	15	5 CAMP CREEK CANYON
16	17	18	6 DRUMM SUMMIT
19	20	21	7 WEST GATE
22	23	24	8 EASTGATE

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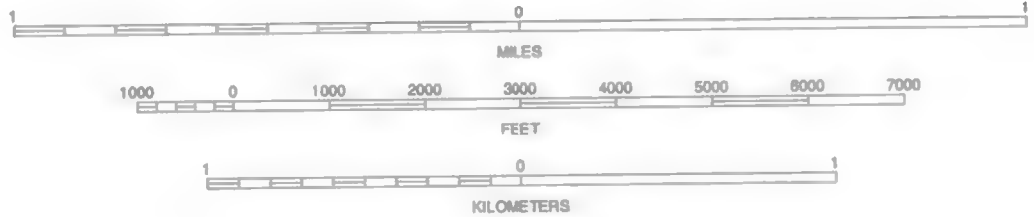
WONDER MOUNTAIN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 65





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 DIXIE VALLEY SE
			2 MOUNT AUGUSTA
			3 CLAN ALPINE RANCH
4		5	4 WONDER MOUNTAIN
			5 COLD SPRINGS
			6 WEST GATE
6	7	8	7 EASTGATE
			8 DESATOYA PEAK

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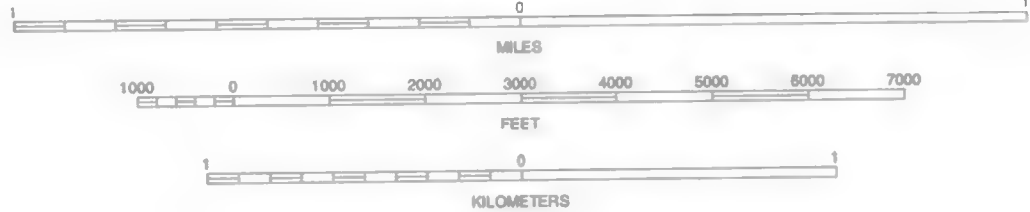
CAMP CREEK CANYON, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 66





This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



1	2	3	1 MOUNT AUGUSTA
4	5	6	2 CLAN ALPINE RANCH
7	8	9	3 BYERS RANCH
10	11	12	4 CAMP CREEK CANYON
13	14	15	5 BASQUE SUMMIT
16	17	18	6 EASTGATE
19	20	21	7 DESATOYA PEAK
22	23	24	8 CARROLL SUMMIT

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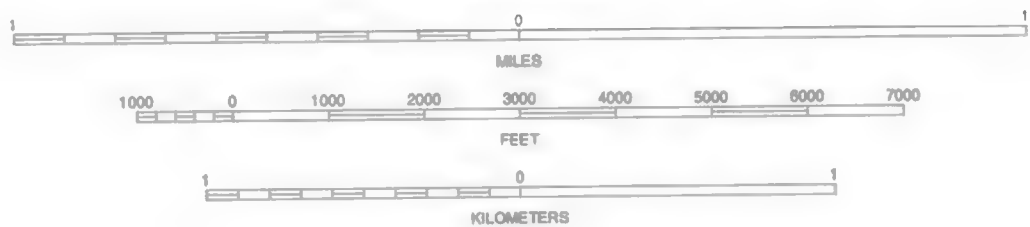
COLD SPRINGS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 67





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 CLAN ALPINE RANCH
4	5	6	2 BYERS RANCH
7	8	9	3 NEW PASS
10	11	12	4 COLD SPRINGS
13	14	15	5 CARROLL SUMMIT NE
16	17	18	6 DESATOYA PEAK
19	20	21	7 CARROLL SUMMIT
22	23	24	8 CARROLL SUMMIT SE

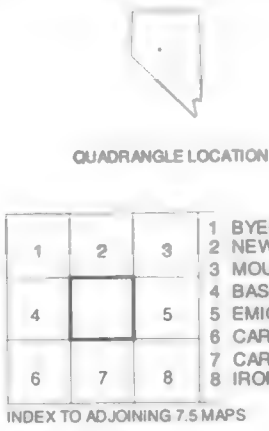
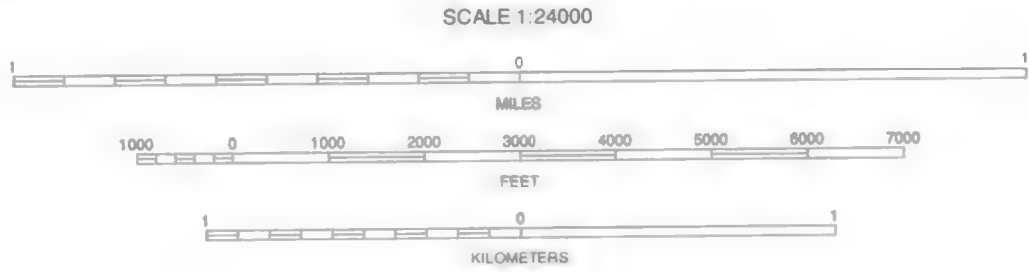
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BASQUE SUMMIT, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 68



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

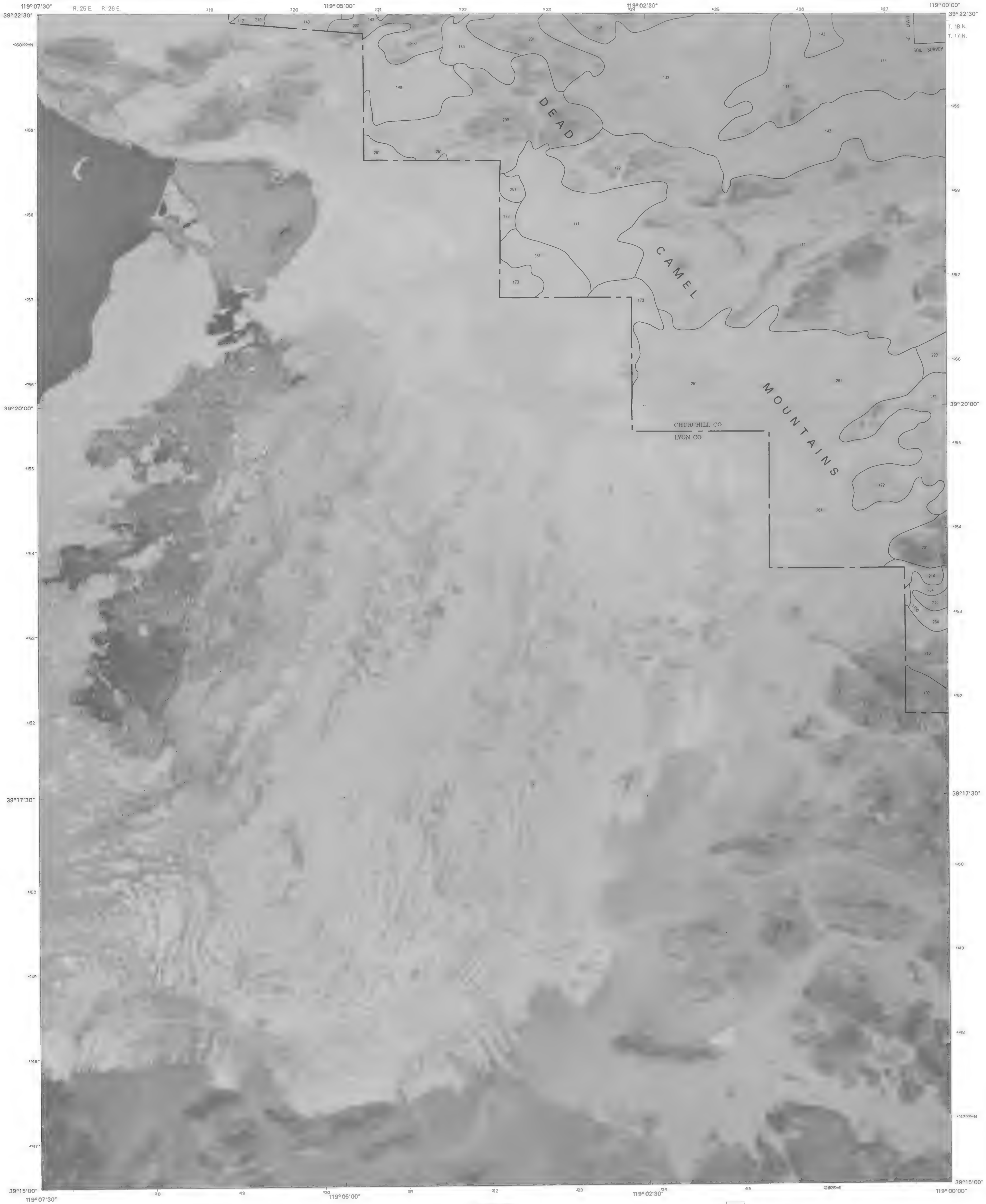


CARROLL SUMMIT NE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 69

1	2	3	1 BYERS RANCH
4	5	6	2 NEW PASS
7	8	9	3 MOUNT AIRY
10	11	12	4 BASQUE SUMMIT
13	14	15	5 EMIGRANT PEAK
16	17	18	6 CARROLL SUMMIT
19	20	21	7 CARROLL SUMMIT SE
22	23	24	8 IRON MOUNTAIN

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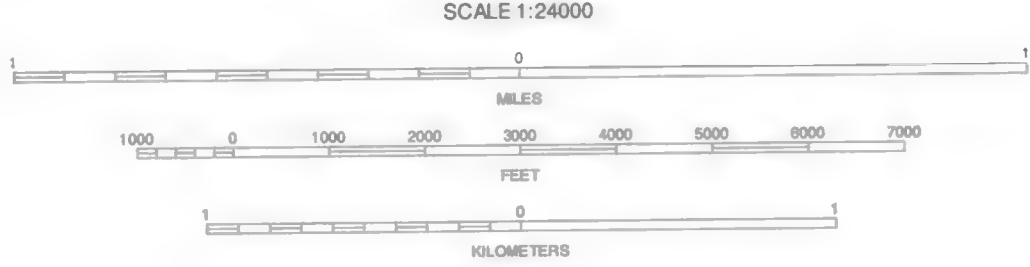




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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH



QUADRANGLE LOCATION

1	2	3	1 SILVER SPRINGS NORTH
4	5	6	2 LAHONTAN DAM
7	8	9	3 SHECKLER RESERVOIR
10	11	12	4 SILVER SPRINGS SOUTH
13	14	15	5 SALT CAVE
16	17	18	6 WABUSKA
19	20	21	7 PARKER BUTTE
22	23	24	8 WILD HORSE BASIN

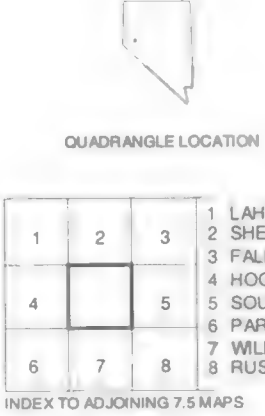
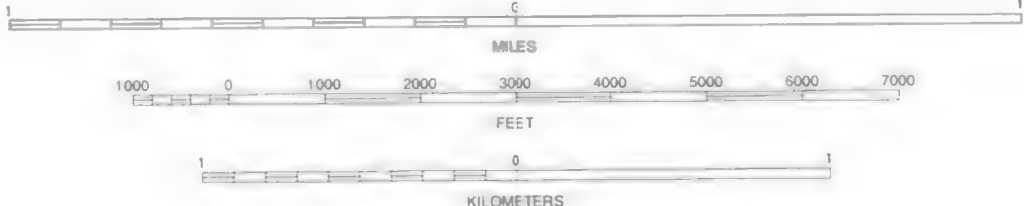
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HOOTEN WELL, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 70



This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

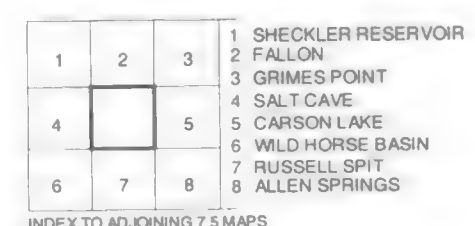
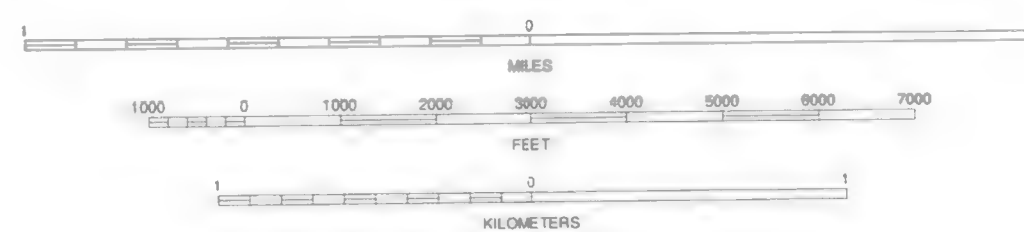
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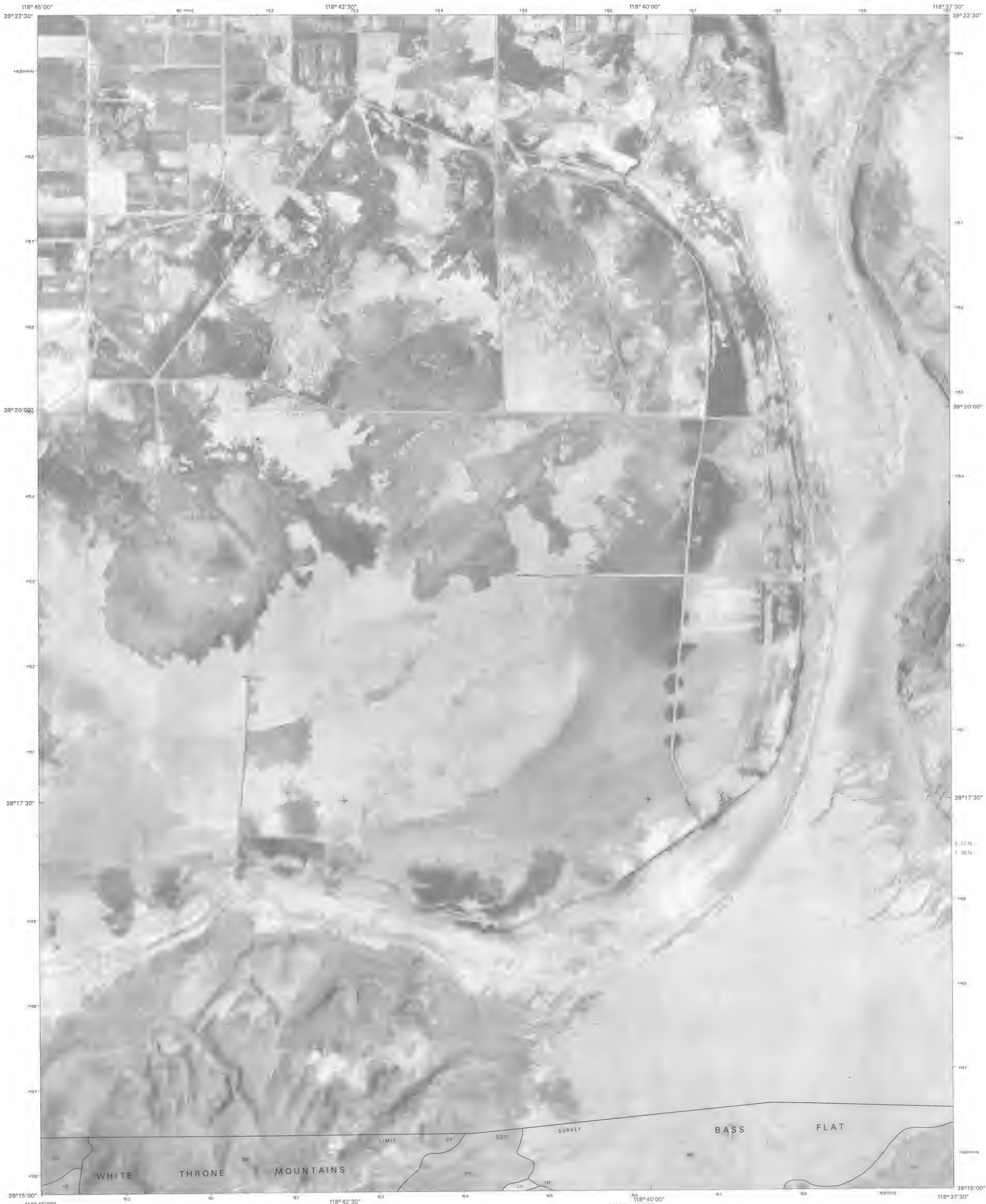
1	2	3	1. LAHONTAN DAM
4	5	2. SHECKLER RESERVOIR	
6	7	3. FALLON	
		4. HOOTEN WELL	
		5. SOUTH OF FALLON	
		6. PARKER BUTTE	
		7. WILD HORSE BASIN	
		8. RUSSELL SPIT	

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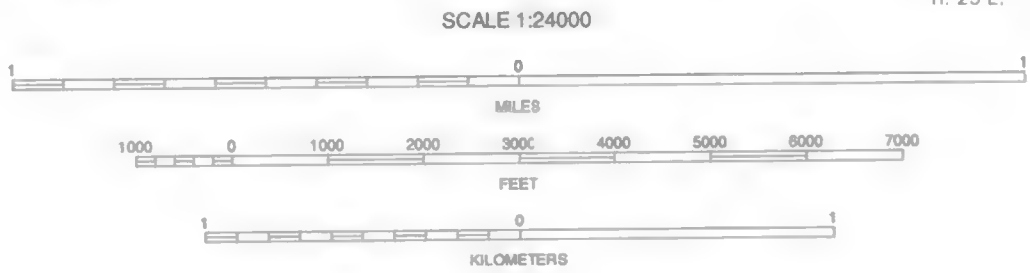


**SOUTH OF FALLON, NEVADA**  
7.5 MINUTE SERIES  
SHEET NUMBER 72



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

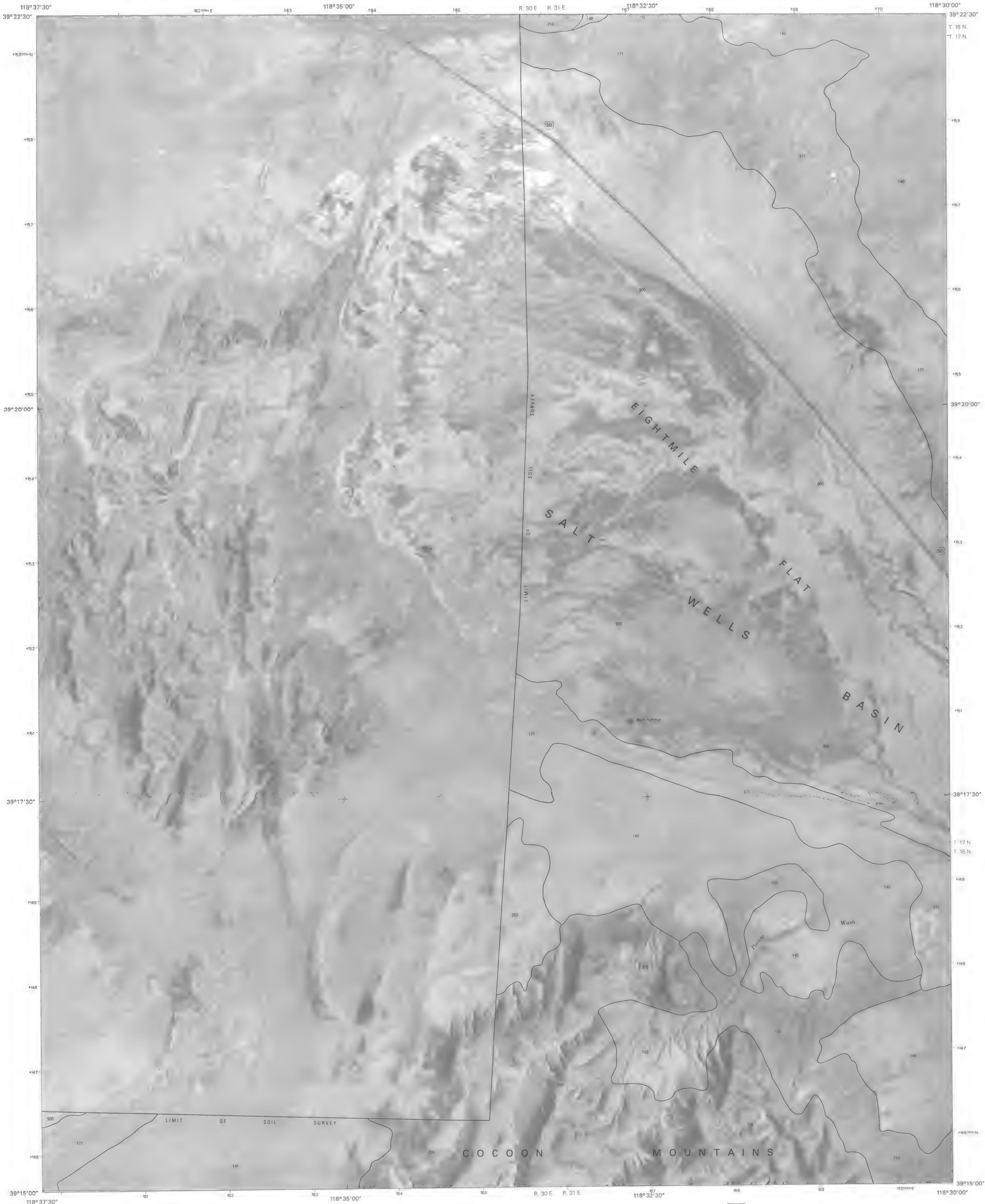


CARSON LAKE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 73

1	2	3	1 FALLON
4	5	6	2 GRIMES POINT
7	8	9	3 LAMONTAIN MOUNTAINS
10	11	12	4 SOUTH OF FALLON
13	14	15	5 BUNELUG MOUNTAINS
16	17	18	6 RUSSELL SPIT
19	20	21	7 ALLEN SPRINGS
22	23	24	8 DIAMOND FIELD JACK WASH

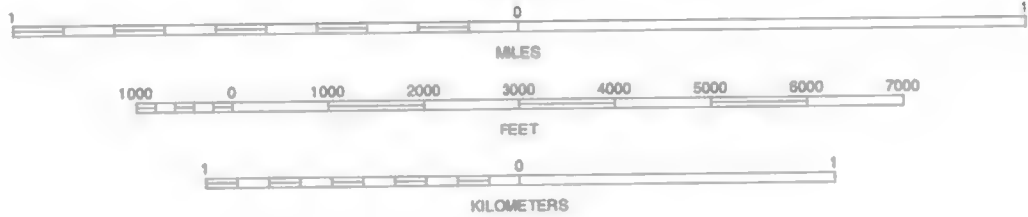
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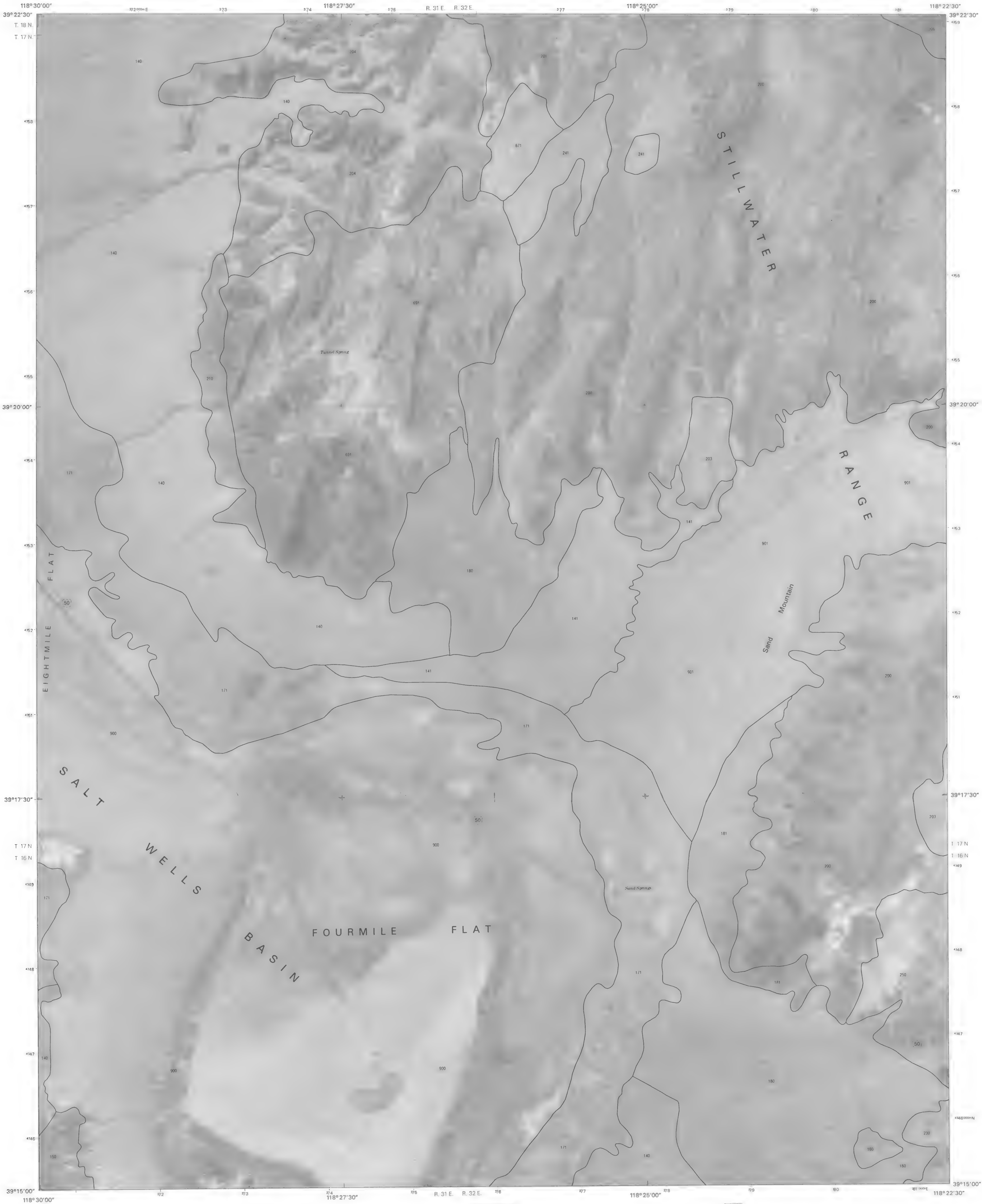
North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



BUNEJUG MOUNTAINS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 74

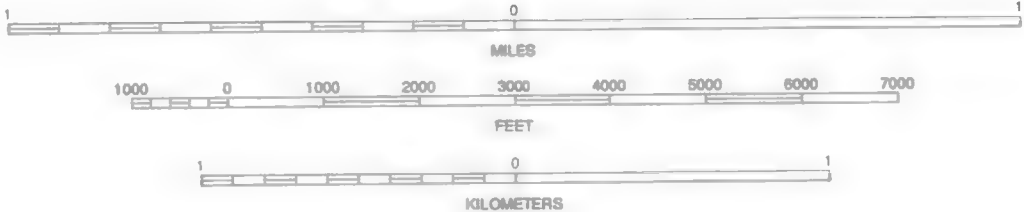
1	2	3	1 GRIMES POINT
4	5	6	2 LAHONTAN MOUNTAINS
7	8	9	3 DIAMOND CANYON
10	11	12	4 CARSON LAKE
13	14	15	5 FOURMILE FLAT
16	17	18	6 ALLEN SPRINGS
19	20	21	7 DIAMOND FIELD JACK WASH
22	23	24	8 FOURMILE CANYON

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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

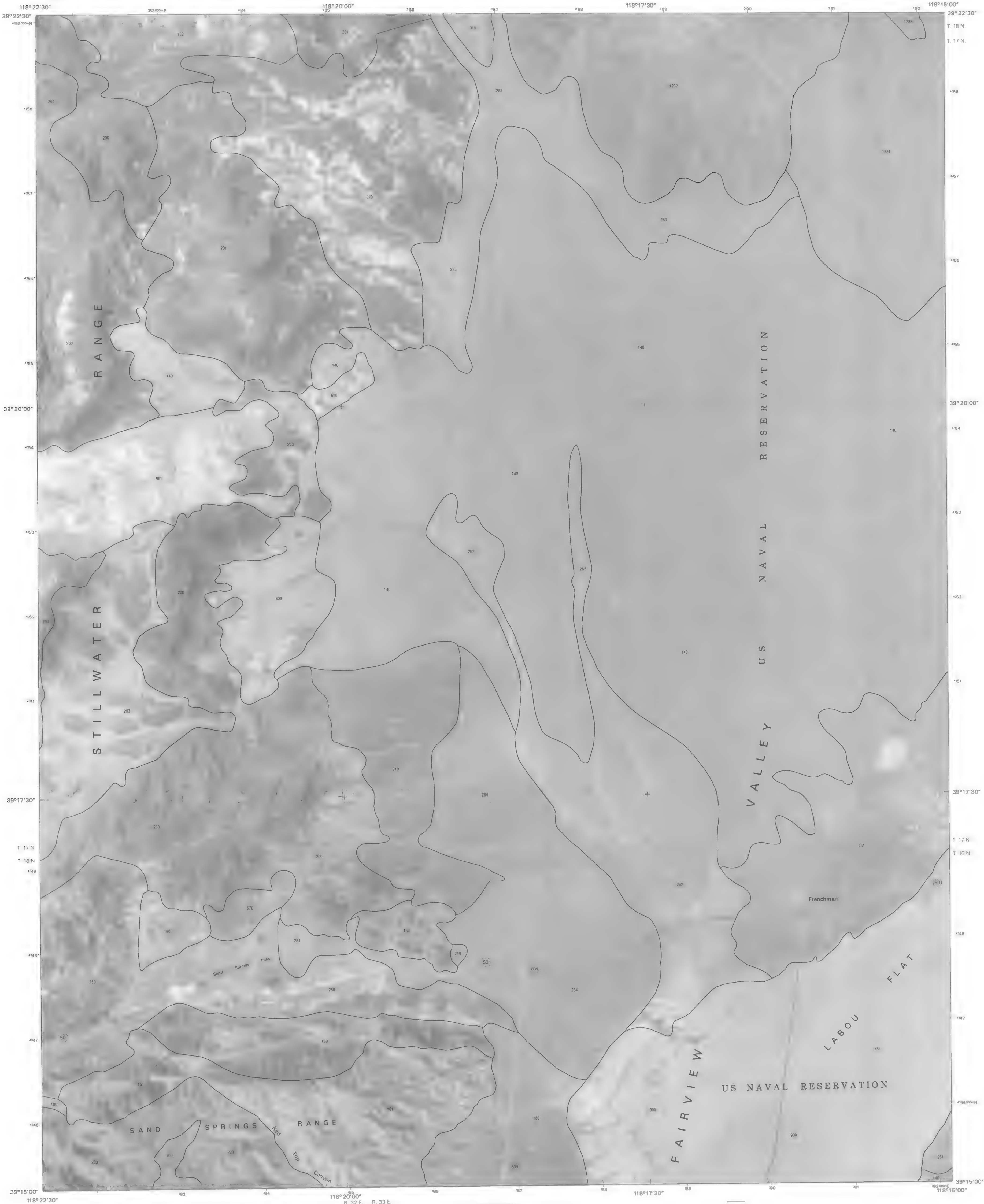
1	2	3	1 LAHONTAN MOUNTAINS
			2 DIAMOND CANYON
			3 LA PLATA CANYON
4		5	4 BUNELUG MOUNTAINS
			5 FRENCHMAN
			6 DIAMOND FIELD JACK WASH
6	7	8	7 FOURMILE CANYON
			8 CHUKAR CANYON

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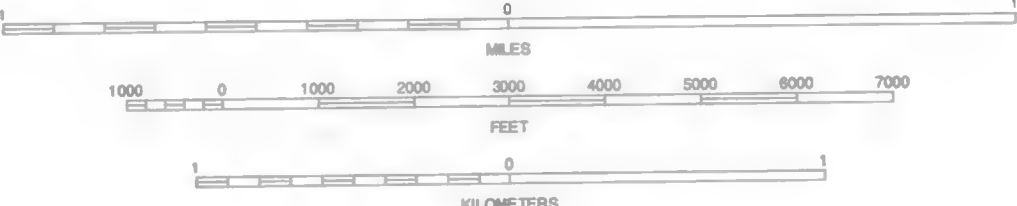
FOURMILE FLAT, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 75





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 DIAMOND CANYON
			2 LA PLATA CANYON
			3 PIROUETTE MOUNTAIN
4		5	4 FOURMILE FLAT
			5 DRUMM SUMMIT
			6 FOURMILE CANYON
6	7	8	7 CHUKAR CANYON
			8 BELL CANYON

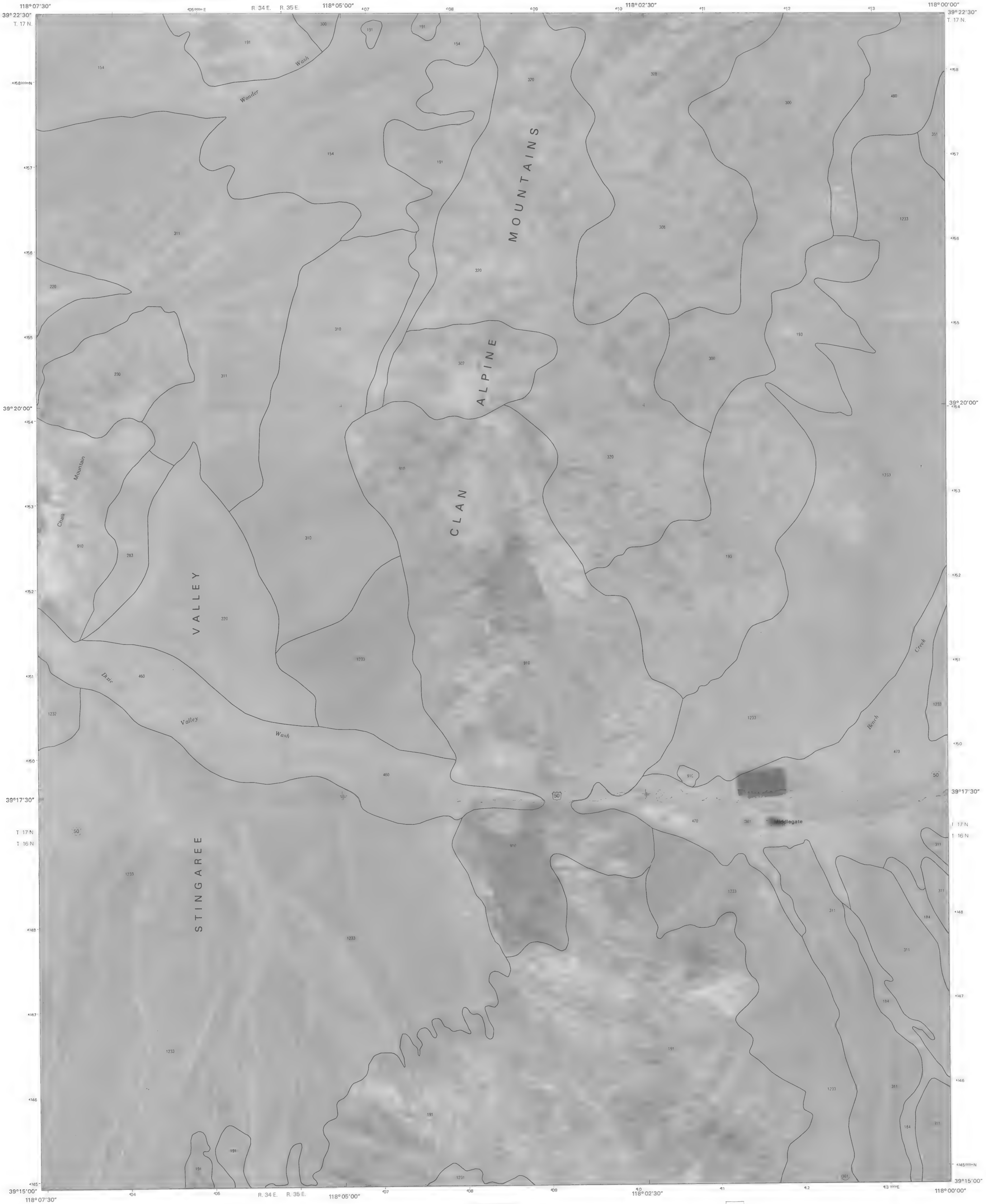
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FRENCHMAN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 76



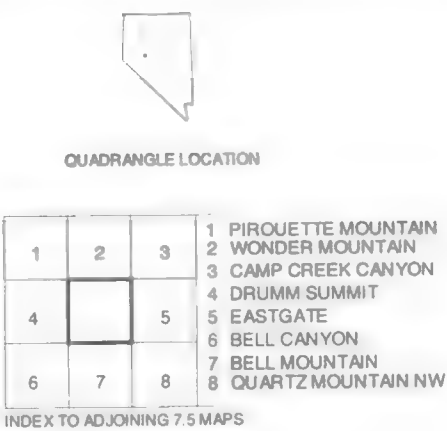
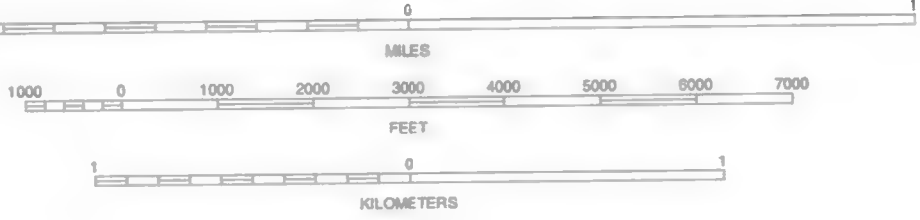
DRUMM SUMMIT, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 77



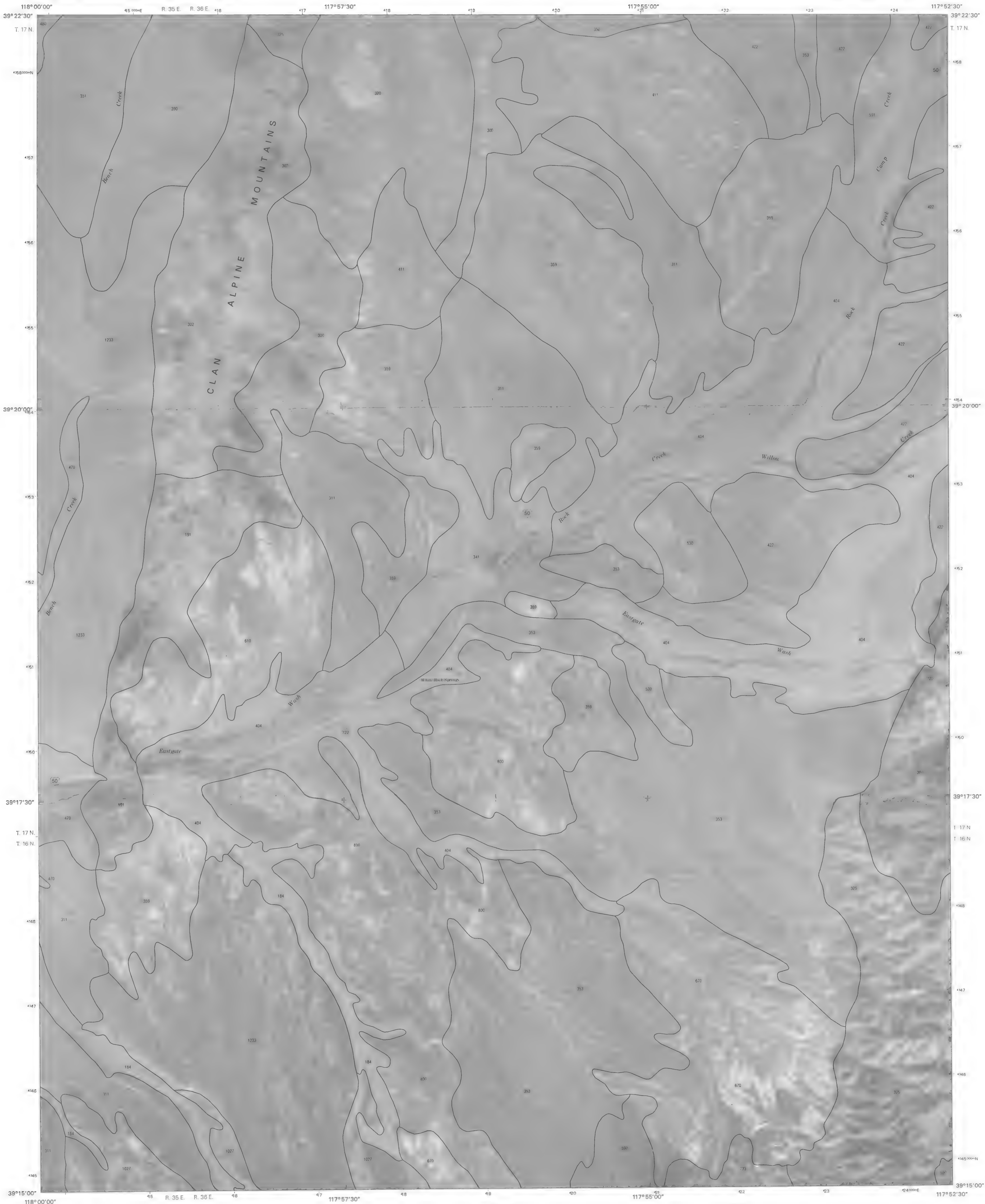


This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

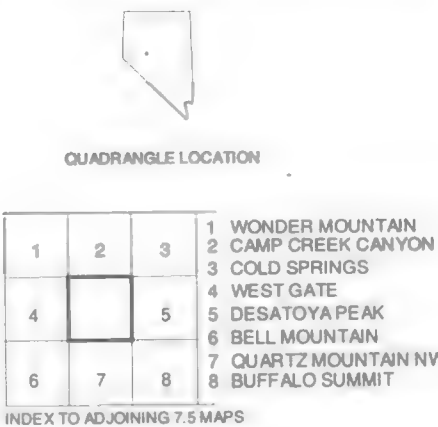
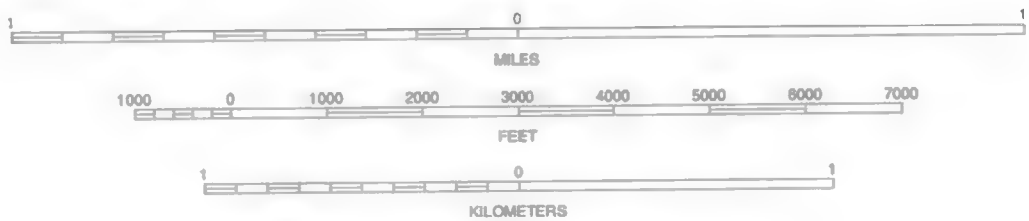


WEST GATE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 78



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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11.



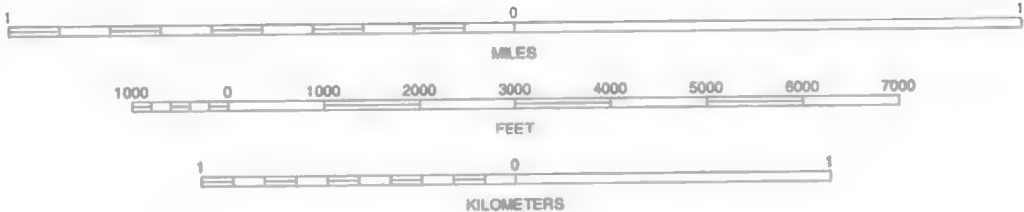
EASTGATE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 79





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



DESATOYA PEAK, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 80

QUADRANGLE LOCATION			
1	2	3	1 CAMP CREEK CANYON
			2 COLD SPRINGS
			3 BASQUE SUMMIT
4		5	4 EASTGATE
			5 CARROLL SUMMIT
			6 QUARTZ MOUNTAIN NW
6	7	8	7 BUFFALO SUMMIT
			8 CAMPBELL CREEK RANCH

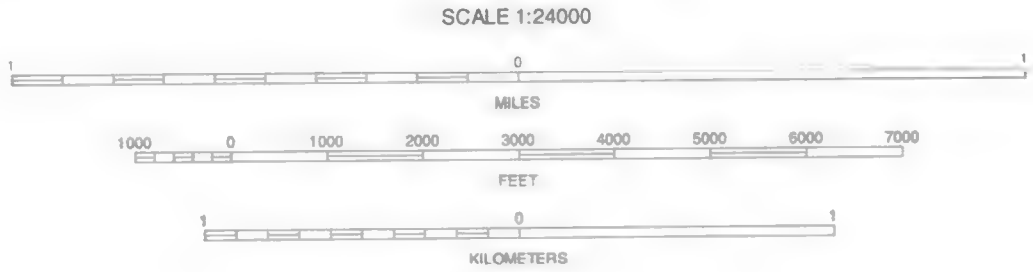
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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 COLD SPRINGS
			2 BASQUE SUMMIT
			3 CARROLL SUMMIT NE
4		5	4 DESATOYA PEAK
			5 CARROLL SUMMIT SE
			6 BUFFALO SUMMIT
6	7	8	7 CAMPBELL CREEK RANCH
			8 GOLD PARK

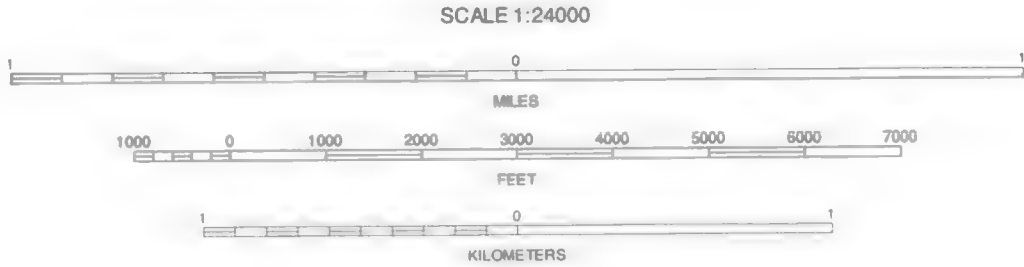
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CARROLL SUMMIT, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 81



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 HOOTEN WELL
			2 SALT CAVE
			3 SOUTH OF FALLON
4		5	4 PARKER BUTTE
			5 RUSSELL SPIT
			6 HINKSON SLOUGH
6	7	8	7 WEBER RESERVOIR
			8 WEBER DAM

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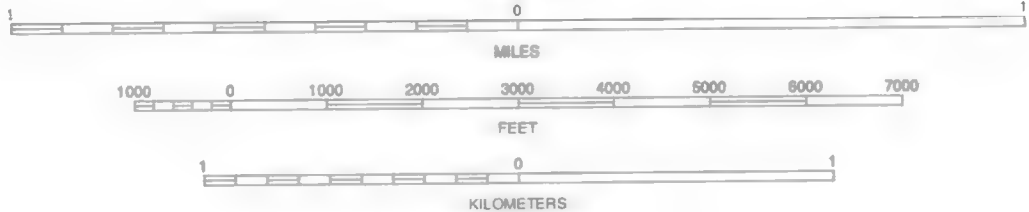
WILD HORSE BASIN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 82





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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11.



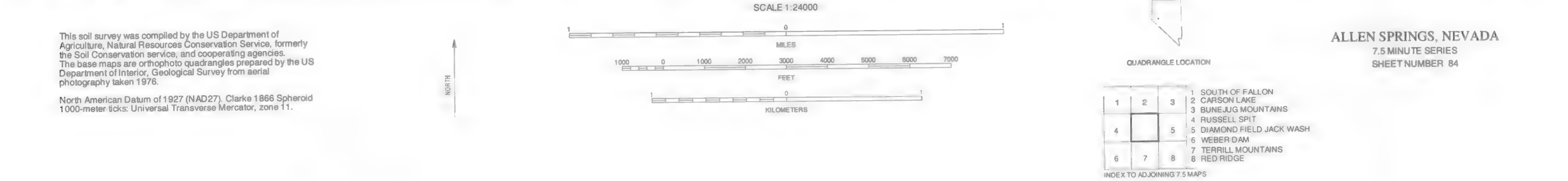
QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	9

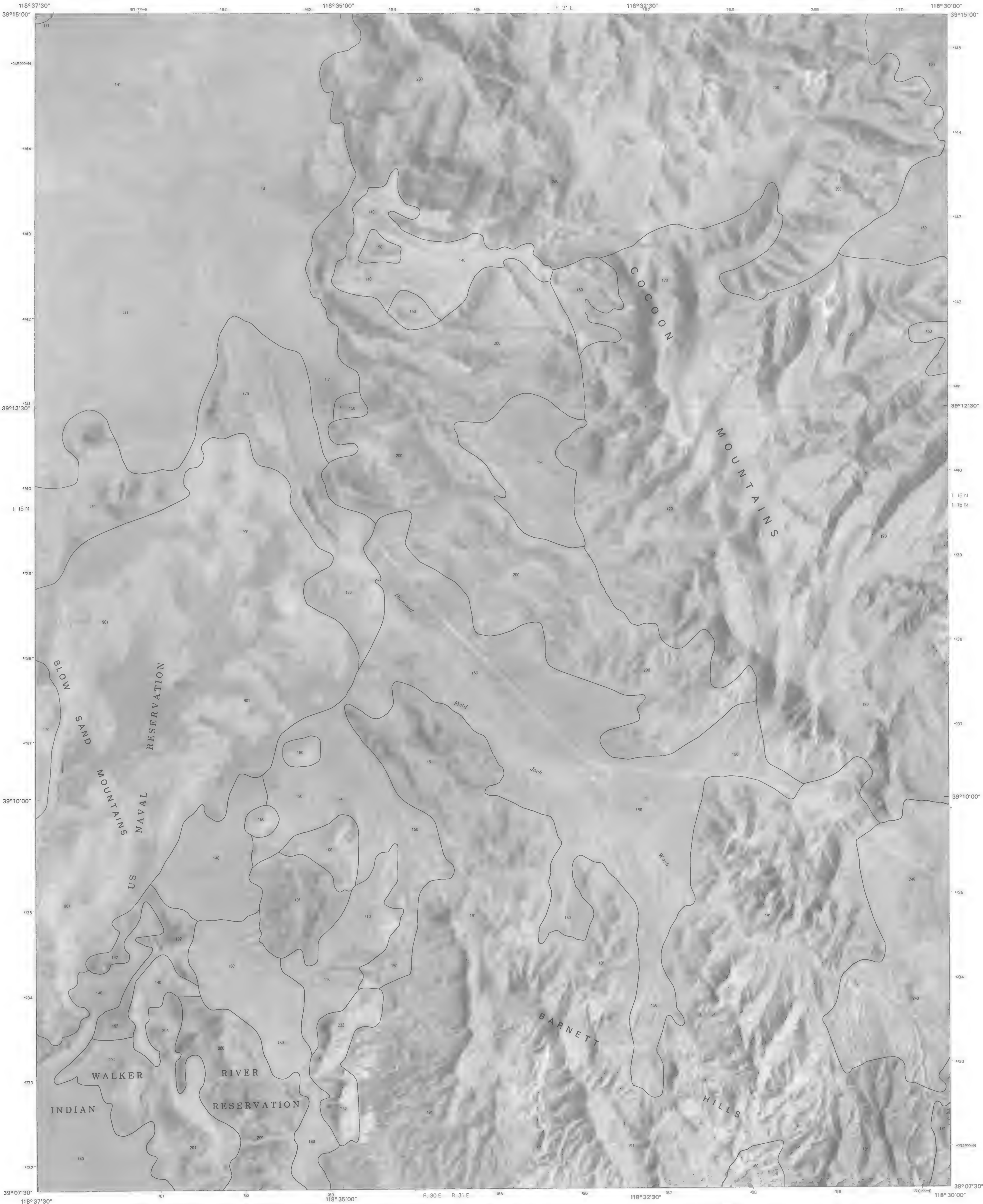
1 SALT CAVE  
2 SOUTH OF FALLON  
3 CARSON LAKE  
4 WILD HORSE BASIN  
5 ALLEN SPRINGS  
6 WEBER RESERVOIR  
7 WEBER DAM  
8 TERRILL MOUNTAINS

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RUSSELL SPIT, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 83



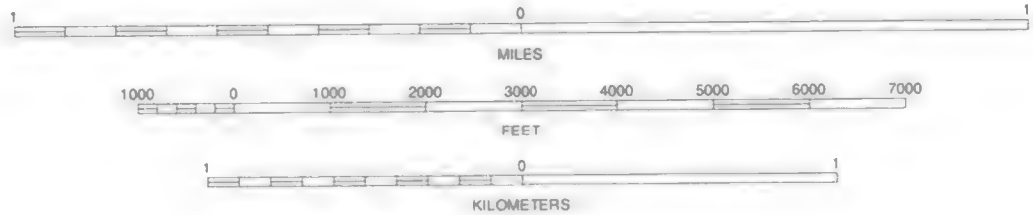




This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH



QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	9

1 CARSON LAKE  
2 BUNEAUG MOUNTAINS  
3 FOURMILE FLAT  
4 ALLEN SPRINGS  
5 FOURMILE CANYON  
6 TERRILL MOUNTAINS  
7 RED RIDGE  
8 RAWHIDE

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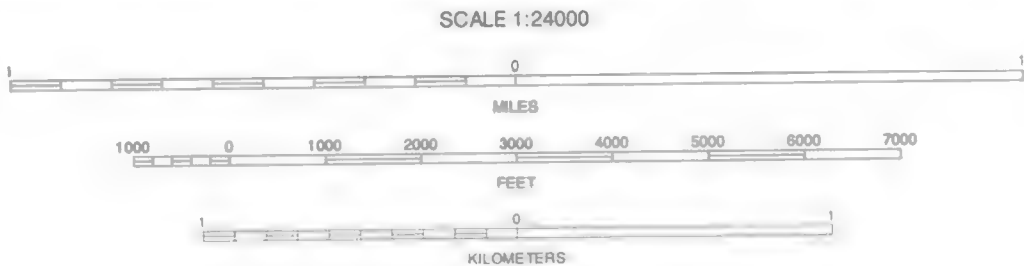
DIAMOND FIELD JACK WASH, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 85





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 BUREAU MOUNTAINS
4	5	6	2 FOURMILE FLAT
7	8	9	3 FRENCHMAN
10	11	12	4 DIAMOND FIELD JACK WASH
13	14	15	5 CHUKAR CANYON
16	17	18	6 RED RIDGE
19	20	21	7 RAWHIDE
22	23	24	8 BIG KASOCK MOUNTAIN

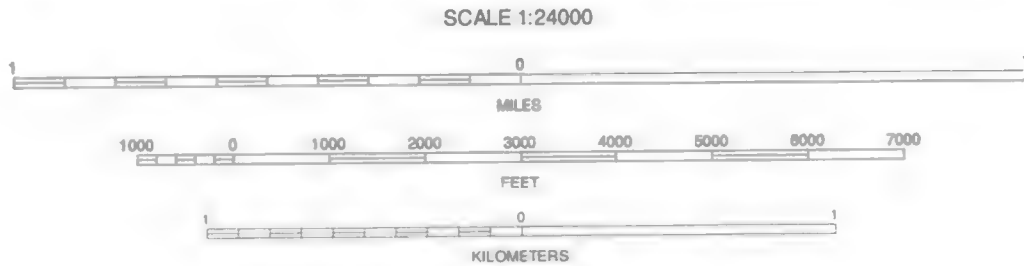
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FOURMILE CANYON, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 86



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 FOURMILE FLAT
			2 FRENCHMAN
			3 DRUMM SUMMIT
4		5	4 FOURMILE CANYON
			5 BELL CANYON
			6 RAWHIDE
6	7	8	7 BIG KASOCK MOUNTAIN
			8 SLATE MOUNTAIN

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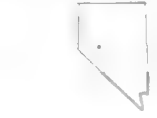
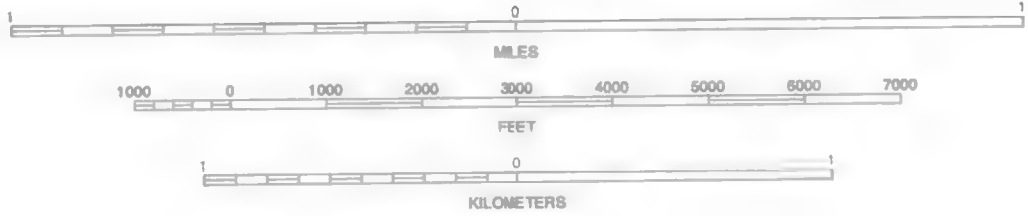
CHUKAR CANYON, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 87





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

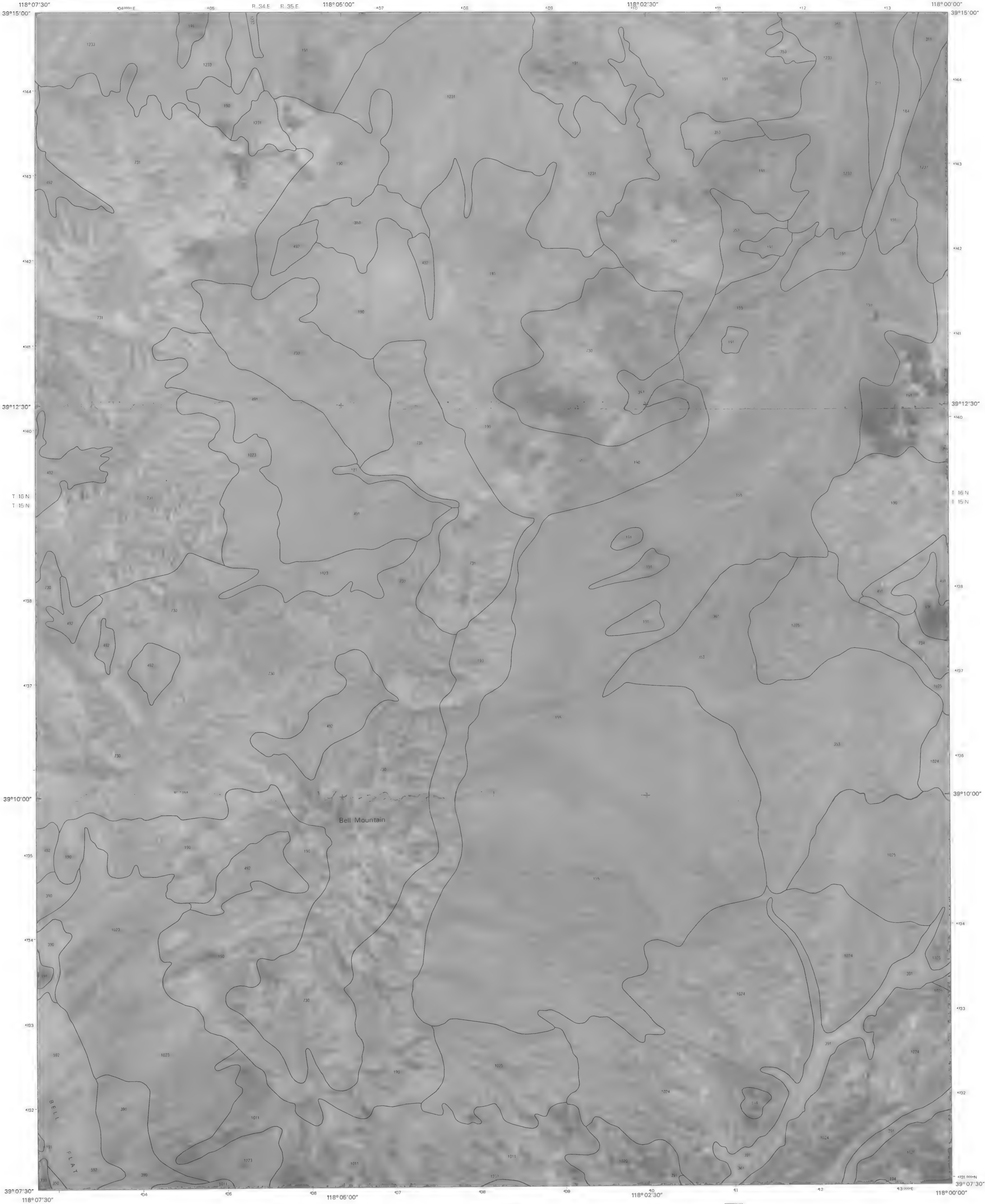


QUADRANGLE LOCATION

1	2	3	1 FRENCHMAN
			2 DRUMM SUMMIT
			3 WEST GATE
4		5	4 CHUKAR CANYON
			5 BELL MOUNTAIN
			6 BIG KASOCK MOUNTAIN
			7 SLATE MOUNTAIN
6	7	8	8 BROKEN HILLS

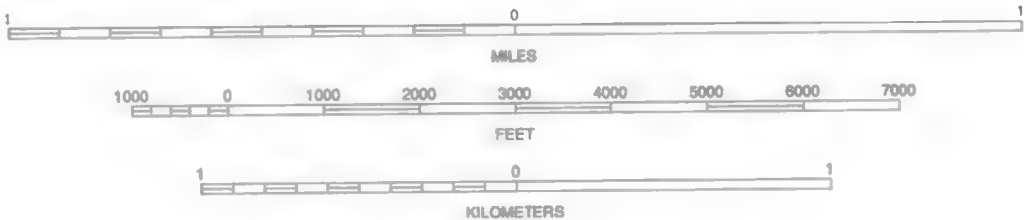
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BELL CANYON, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 88



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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 DRUMM SUMMIT
			2 WEST GATE
			3 EAST GATE
4		5	4 BELL CANYON
			5 QUARTZ MOUNTAIN NW
			6 SLATE MOUNTAIN
6	7	8	7 BROKEN HILLS
			8 QUARTZ MOUNTAIN

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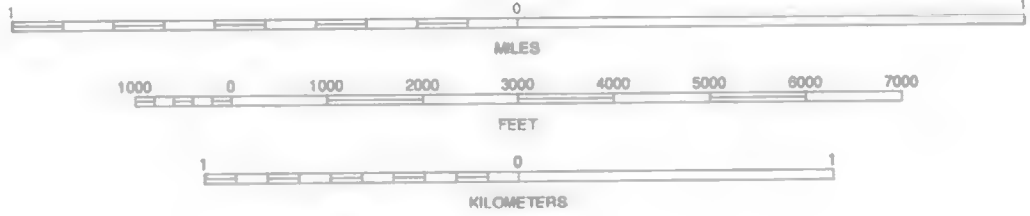
BELL MOUNTAIN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 89





This soil survey was compiled by the US Department of Agriculture, Natural Resources Conservation Service, formerly the Soil Conservation Service, and cooperating agencies. The base maps are orthophoto quadrangles prepared by the US Department of Interior, Geological Survey from aerial photography taken 1976.

North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



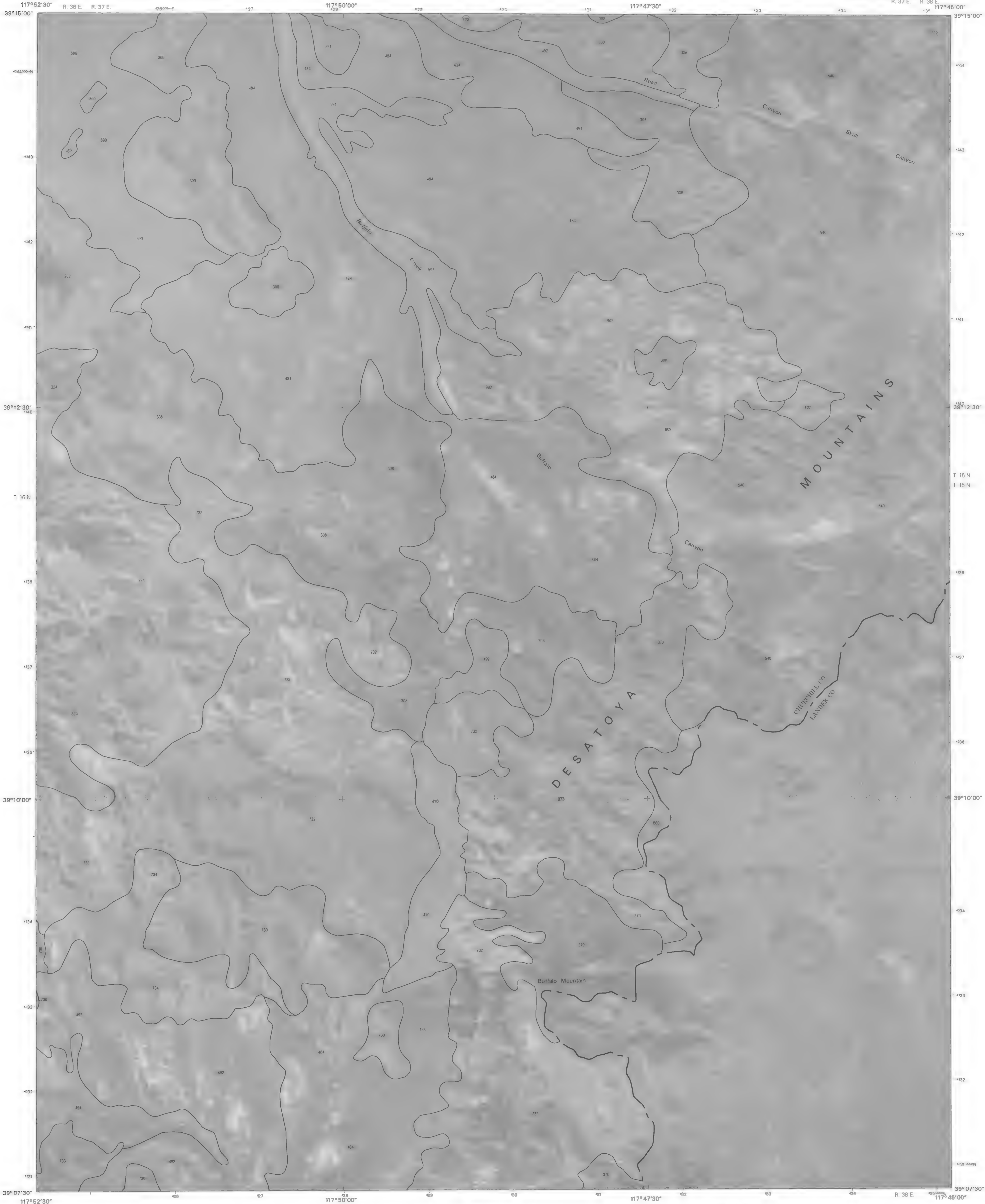
QUADRANGLE LOCATION

1	2	3	1 WEST GATE
			2 EASTGATE
			3 DESATOYA PEAK
4		5	4 BELL MOUNTAIN
			5 BUFFALO SUMMIT
			6 BROKEN HILLS
6	7	8	7 QUARTZ MOUNTAIN
			8 BURNT CABIN SUMMIT

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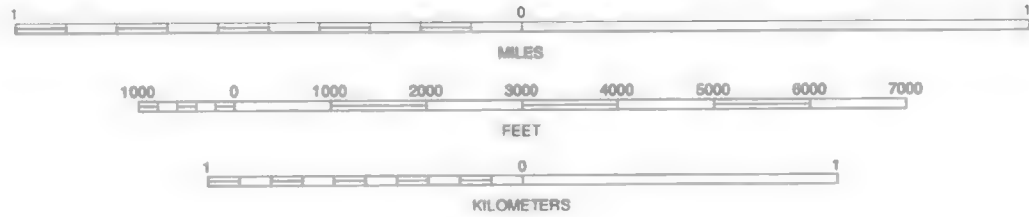
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QUARTZ MOUNTAIN NW, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 90



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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1 EASTGATE
			2 DESATOYA PEAK
			3 CARROLL SUMMIT
4		5	4 QUARTZ MOUNTAIN NW
			5 CAMPBELL CREEK RANCH
			6 QUARTZ MOUNTAIN
6	7	8	7 BURNT CABIN SUMMIT
			8 MIDAS SPRING

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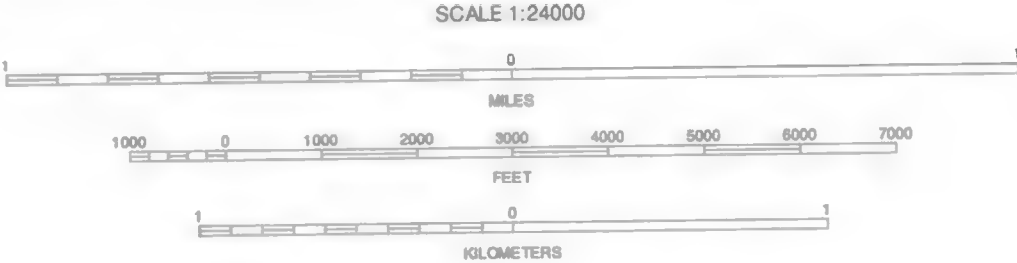
BUFFALO SUMMIT, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 91





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

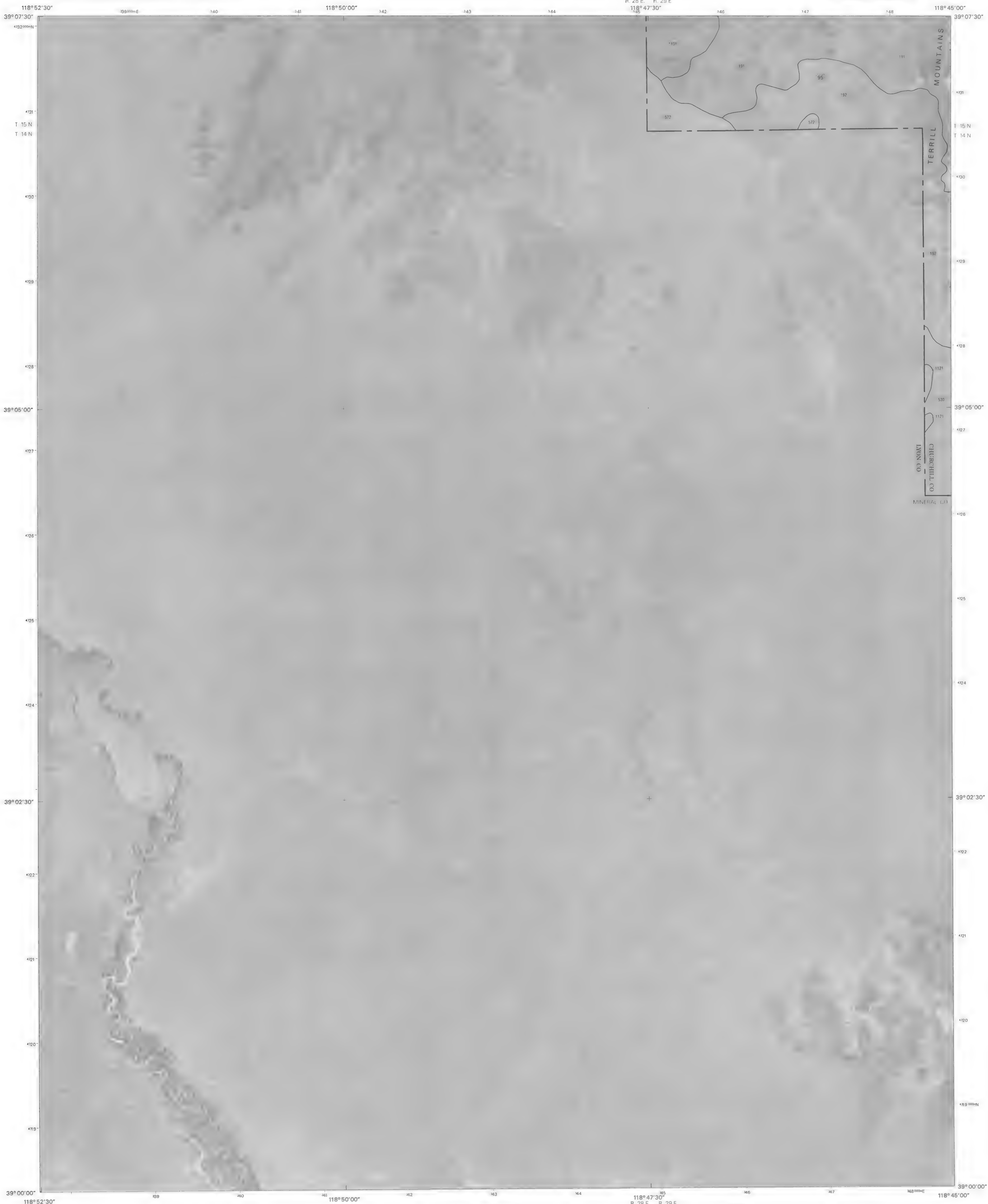


QUADRANGLE LOCATION

1	2	3	1 DESATOYA PEAK
			2 CARROLL SUMMIT
			3 CARROLL SUMMIT SE
4		5	4 BUFFALO SUMMIT
			5 GOLD PARK
			6 BURNT CABIN SUMMIT
			7 MIDAS SPRING
6	7	8	8 SOUTH SHOSHONE PEAK

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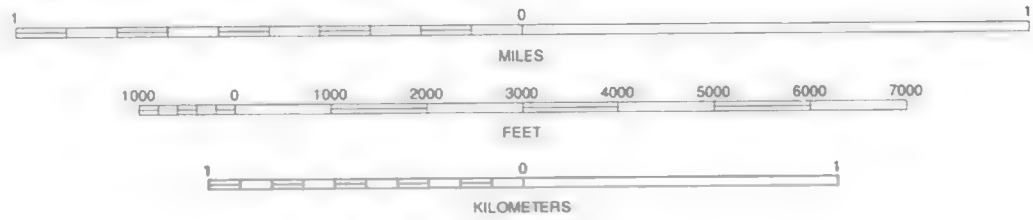
CAMPBELL CREEK RANCH, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 92



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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH



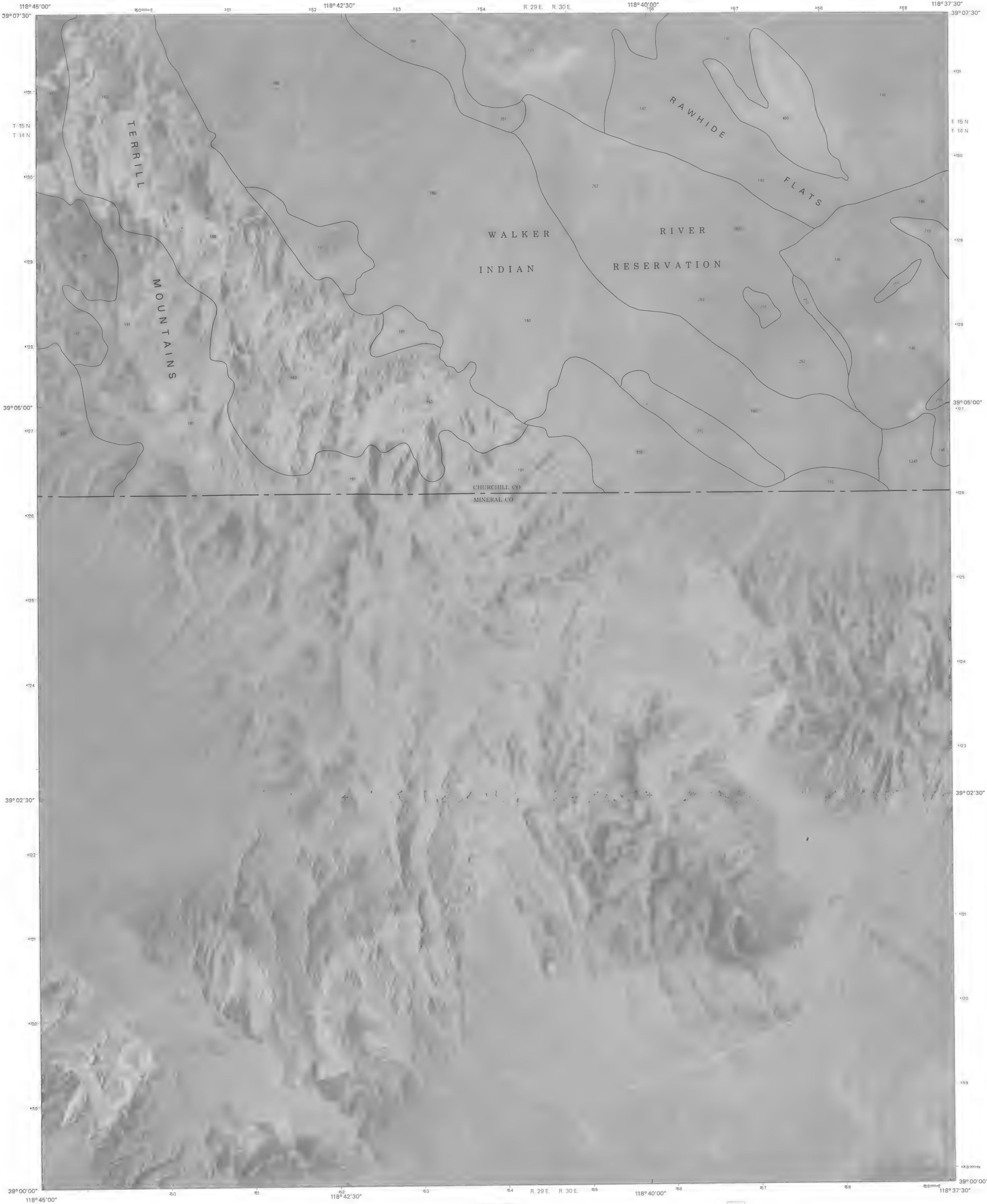
QUADRANGLE LOCATION

1	2	3	1 WILD HORSE BASIN
4	5	6	2 RUSSELL SPIT
7	8	9	3 ALLEN SPRINGS
			4 WEBER RESERVOIR
			5 TERRILL MOUNTAINS
			6 HUSSMAN SPRING
			7 SCHURZ
			8 GILLIS CANYON NW

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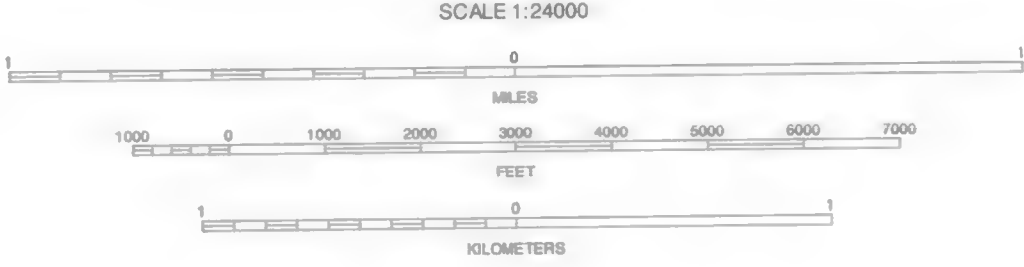
WEBER DAM, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 93





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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

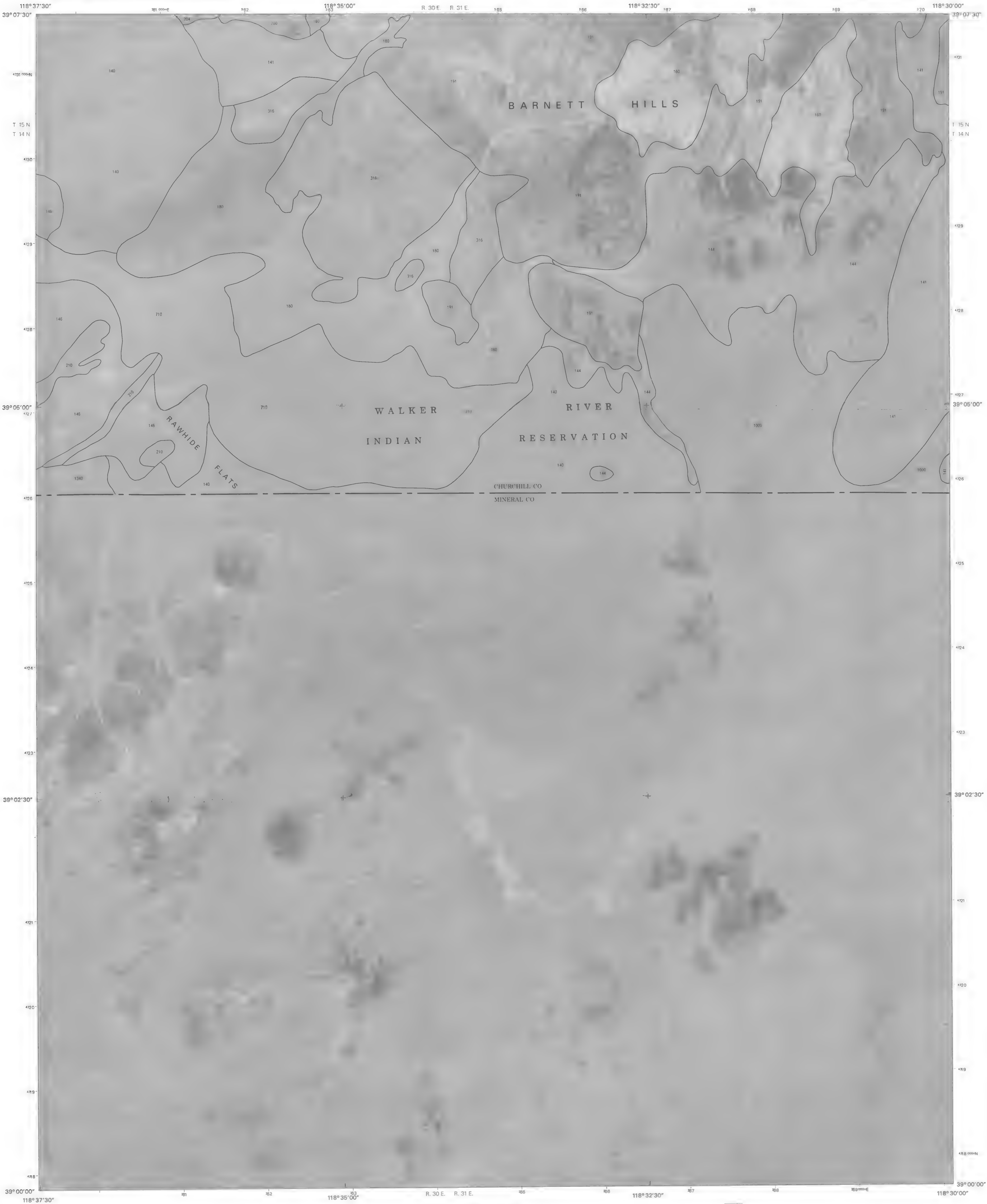


QUADRANGLE LOCATION

1	2	3	1 RUSSELL SPIT
			2 ALLEN SPRINGS
			3 DIAMOND FIELD JACK WASH
4			4 WEBER DAM
			5 RED RIDGE
			6 SCHURZ
	7	8	7 GILLIS CANYON NW
			8 HUPM WASH

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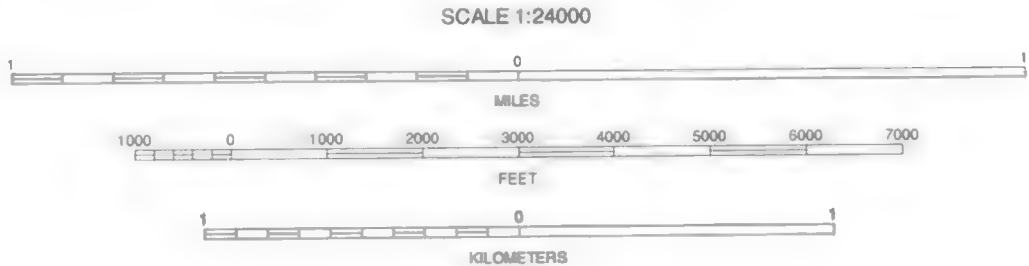
TERRILL MOUNTAINS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 94



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North American Datum of 1927 (NAD27). Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH

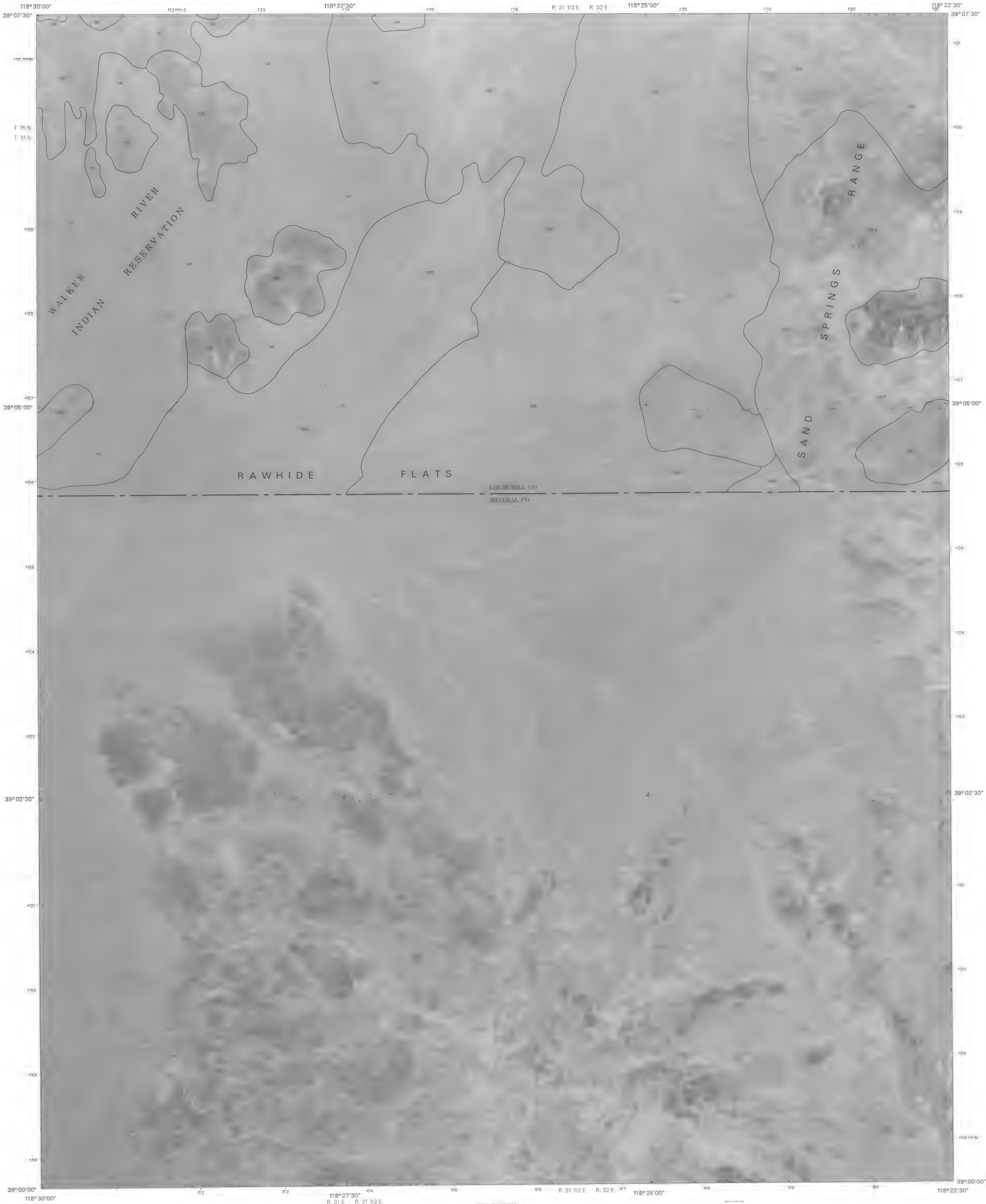


1	2	3	1 ALLEN SPRINGS
			2 DIAMOND FIELD JACK WASH
			3 FOURMILE CANYON
4		5	4 TERRILL MOUNTAINS
			5 RAWHIDE
			6 GILLIS CANYON NW
6	7	8	7 HU-PWA WASH
			8 PILOT CONE

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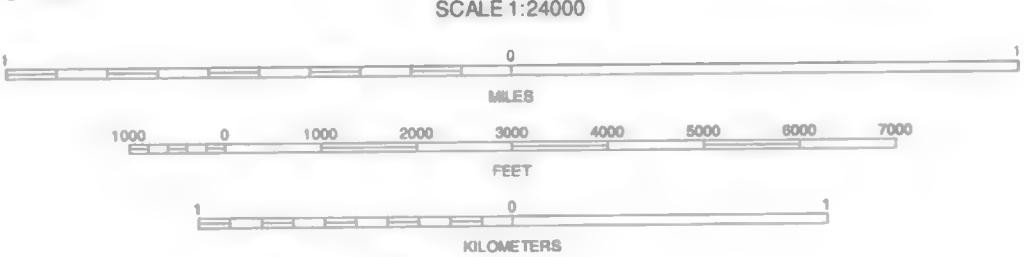
RED RIDGE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 95





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North American Datum of 1927 (NAD27) Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.



QUADRANGLE LOCATION

1	2	3	1	DIAMOND FIELD JACK WASH
4	5	6	2	FOURMILE CANYON
7	8	9	3	CHUKAR CANYON
10	11	12	4	RED RIDGE
13	14	15	5	BIG KASOCK MOUNTAIN
16	17	18	6	HU-PW WASH
19	20	21	7	PILOT CONE
22	23	24	8	MURPHY'S WELL

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RAWHIDE, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 96



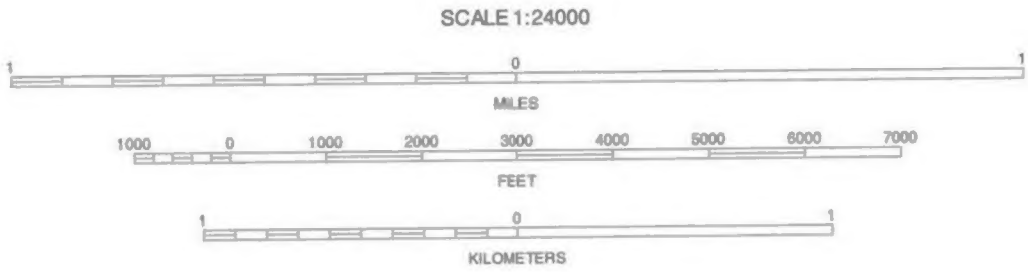




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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH



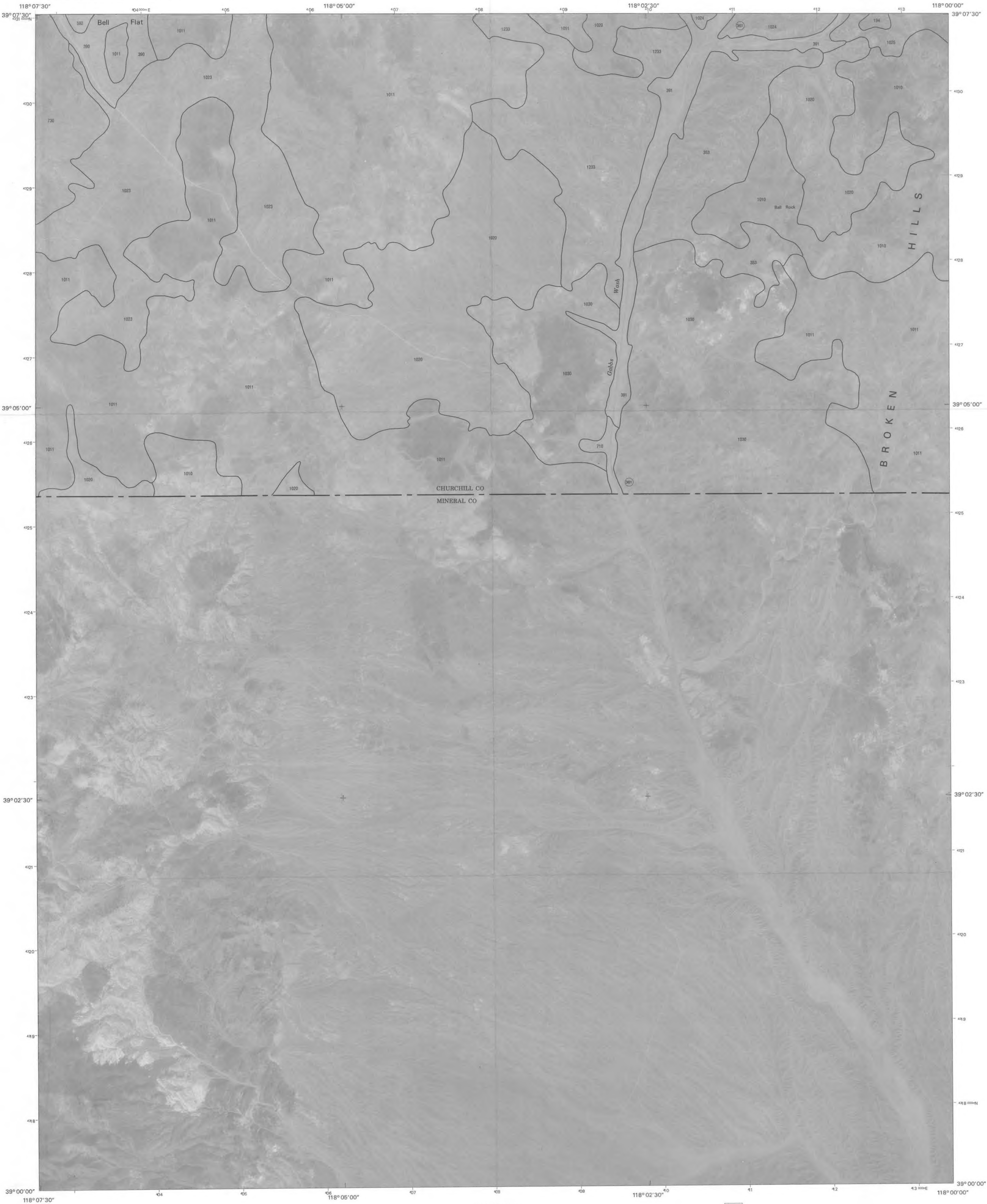
QUADRANGLE LOCATION

1	2	3	1 CHUKAR CANYON
			2 BELL CANYON
			3 BELL MOUNTAIN
4		5	4 BIG KASOCK MOUNTAIN
			5 BROKEN HILLS
			6 MURPHYS WELL
			7 MOUNT ANNIE
6	7	8	8 MOUNT ANNIE NE

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SLATE MOUNTAIN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 98

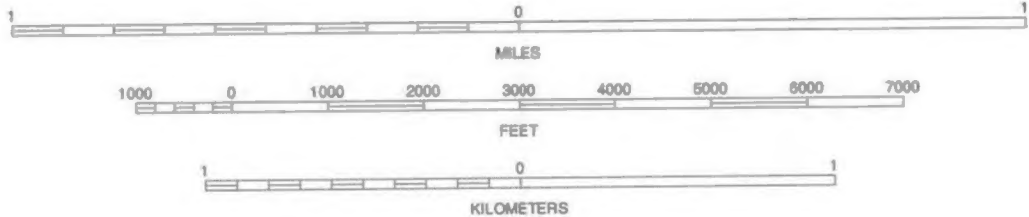




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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH



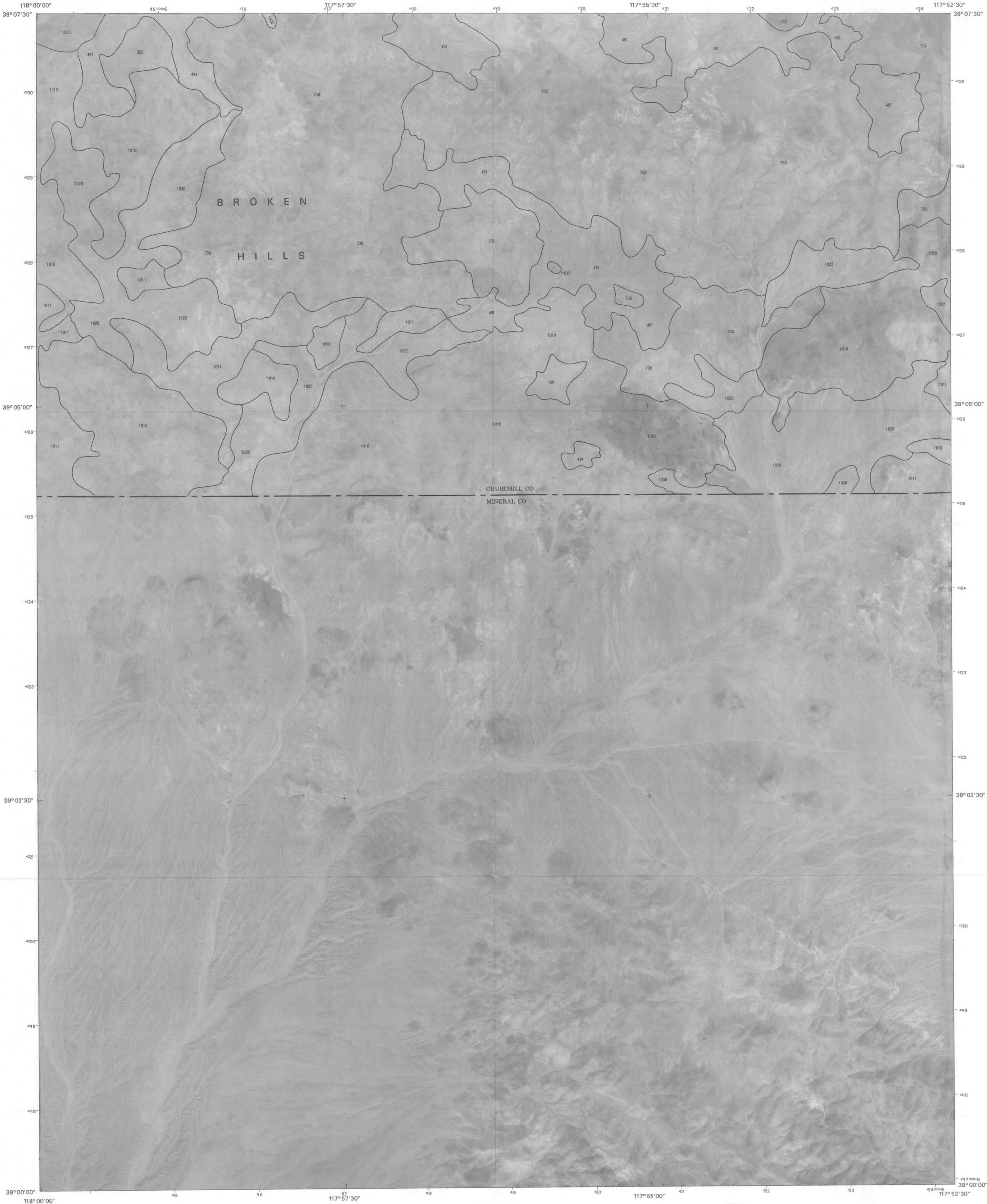
QUADRANGLE LOCATION

1	2	3	1 BELL CANYON
			2 BELL MOUNTAIN
4		5	3 QUARTZ MOUNTAIN NW
			4 SLATE MOUNTAIN
			5 QUARTZ MOUNTAIN
			6 MOUNT ANNIE
6	7	8	7 MOUNT ANNIE NE
			8 DOWNEYVILLE

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BROKEN HILLS, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 99

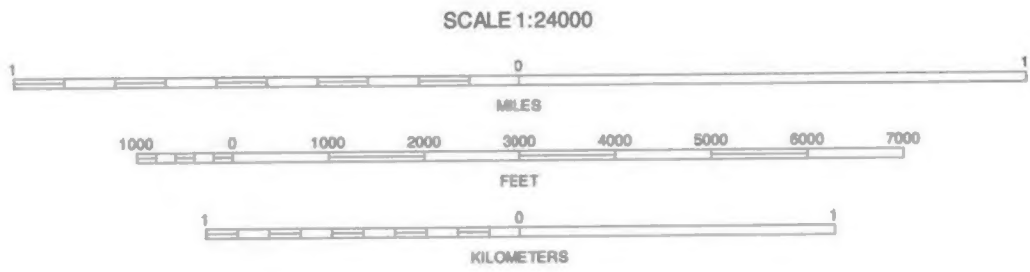




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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH



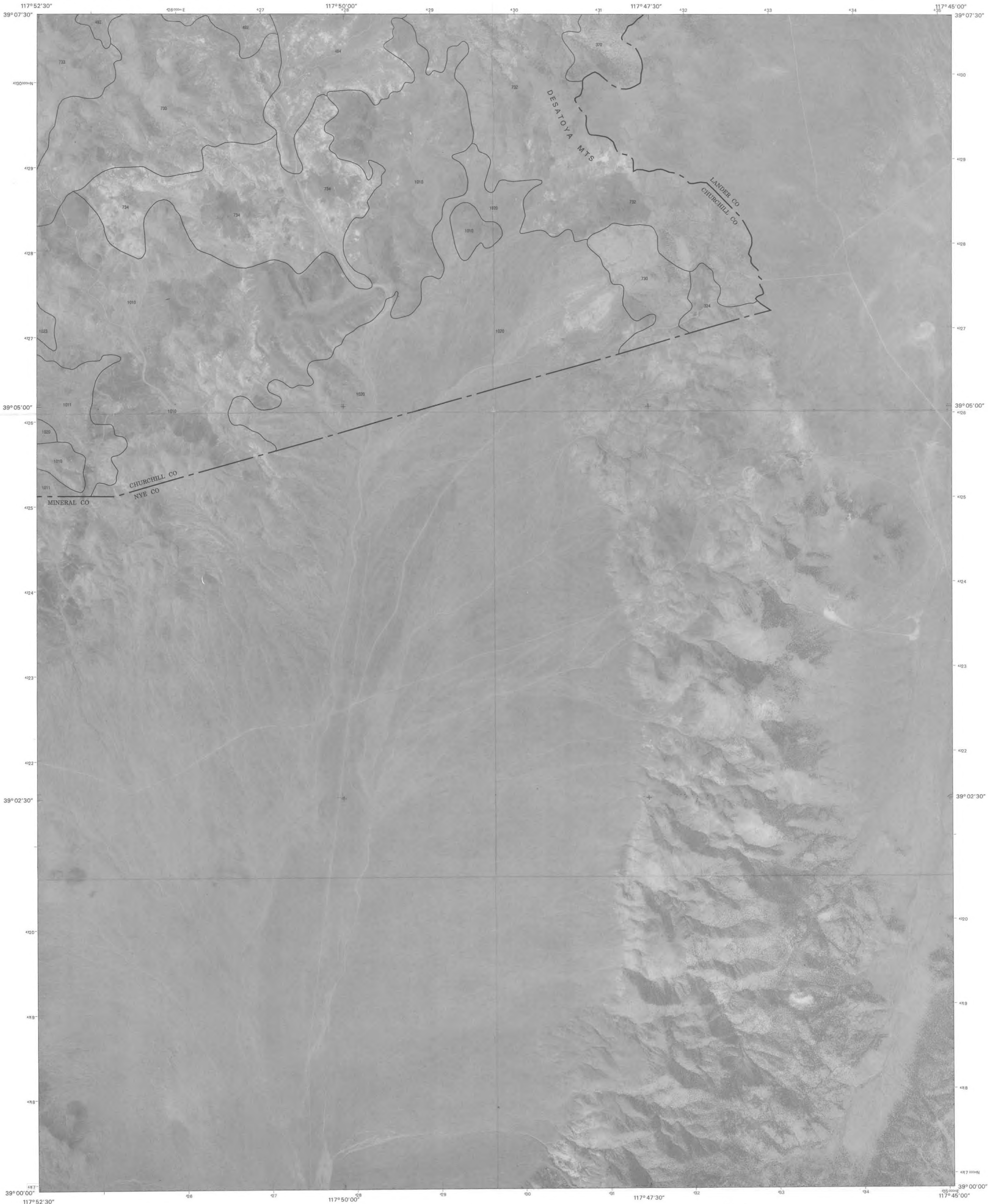
QUADRANGLE LOCATION

QUARTZ MOUNTAIN, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 100

1	2	3	1 BELL MOUNTAIN
4	5	2 QUARTZ MOUNTAIN NW	3 BUFFALO SUMMIT
6	7	4 BROKEN HILLS	5 BURNT CABIN SUMMIT
		6 MOUNT ANNIE NE	7 DOWNEYVILLE
		8 ELLSWORTH	

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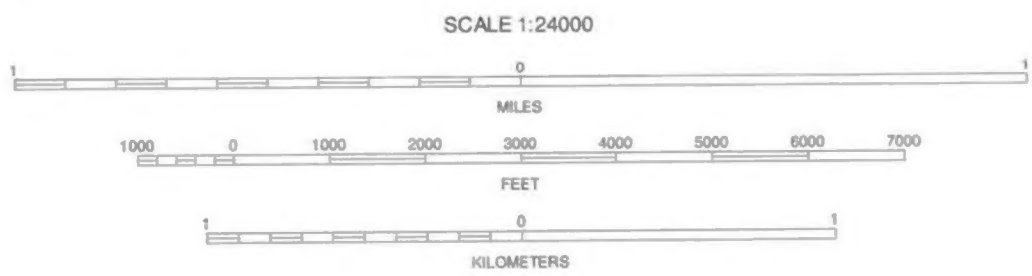




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North American Datum of 1927 (NAD27), Clarke 1866 Spheroid  
1000-meter ticks: Universal Transverse Mercator, zone 11.

NORTH



QUADRANGLE LOCATION

1	2	3	1 QUARTZ MOUNTAIN NW
			2 BUFFALO SUMMIT
4		5	3 CAMPBELL CREEK RANCH
			4 QUARTZ MOUNTAIN
6	7	8	5 MIDAS SPRING
			6 DOWNEYVILLE
			7 ELLSWORTH
			8 TONE NW

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INDEX TO ADJOINING 7.5 MAPS

BURNT CABIN SUMMIT, NEVADA  
7.5 MINUTE SERIES  
SHEET NUMBER 101